

BURMESE ECONOMIC LIFE

BY

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Foreword by

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FOREWORD

It is not without some embarrassment that I comply with the request of my friend Mr. Andrus for a Foreword to his study of *Burmese Economic Life*. For it would hardly seem to require an introduction: good wine needs no bush. As a former professor of economics in the University of Rangoon he enjoyed exceptional opportunities for applying his professional technique to the study of local problems, and even a first glance at his book will show that within a comparatively brief space he has collected a vast mass of up-to-date material. On purely economic questions he speaks with an authority to which I cannot pretend, for I can make no claim to be an economist. However, my work as an official in Burma gave me an interest in social conditions which led me as an amateur to the study of economics. Mr. Andrus, almost alone among professional economists, displayed an active interest in rural life and welfare, and it was our common interest in this field of study that brought us together. Presumably it is for this reason that he has called on me, and perhaps it may be useful to readers of his work if I try to draw in bold outline a general picture of the conditions which he describes in detail.

Writing as an Englishman, it would seem permissible to emphasize the fact that in more than one respect this account of the development of Burma provides a sufficient justification of British rule. Little more than a hundred years ago, when we first assumed responsibility for government in Burma, it contributed practically nothing to the general welfare of the world. Now, as Mr. Andrus shows, it can make a very substantial contribution. Just before the Japanese invasion it was exporting 3,500,000 tons of rice, and large quantities of oil

products and minerals, together with some rubber and other miscellaneous commodities, while the total annual value of the exports was approaching \$200,000,000. In return for these exports it provided a valuable market for textiles and other goods for native consumption, and also for the machinery and other requisites for enhancing its productive capacity. All this economic progress is the direct result of the British occupation. Regarded as a business concern Burma under British rule was good business.

Naturally it was good business for the British, who established the system of law and order that allowed of economic progress and who played so large a part in fostering production. But it is important to notice that the progress has for the most part been achieved by stimulating native enterprise. In this respect the development of Burma differs markedly from that of the dependencies of other colonial powers, where the development has been mainly due to state or capitalist production on plantations or other large-scale enterprise. In Burma capitalist enterprise has been active in the oil fields and the mines, but this is a feature of the present century; up to the beginning of this century, the main product and, apart from teak, almost the only product was rice, in which European enterprise was concerned solely in milling the grain purchased from native cultivators. British rule insured the security necessary to business transactions; British merchants found that they could sell cloth goods to Burmans below the price charged for the local product, and could pay them more for their rice than they had formerly received. The link with Britain opened up new markets for native produce, thus providing Burmans with the money to gratify their wants. To this stimulus native enterprise responded so readily that within a comparatively short period upwards of ten million acres of waste swamp and jungle were reclaimed and converted into a granary for Asia, while the population of Burma showed a corresponding increase. British rule enabled a much larger population to sell more and to buy more.

All this was good business for Britain. But it should be realized that merchants of any other country were equally free

to settle in Burma, and to buy rice and sell cloth and, in general, to conduct business on the same terms as the British. The Atlantic Charter has emphasized the policy of the "open door" as a condition of modern colonial rule. But this has been a characteristic feature of British rule from its earliest establishment in Burma, not until the Ottawa Agreement of 1932 was there any deviation from it. From the first, Indians and, to a less extent, Chinese have been actively engaged in business in Burma, though other peoples did not take advantage of their opportunities to any considerable extent until the beginning of the present century. It was about this time that Germany and Japan stepped in. Just before World War I, exports to Germany were nearly on a par with those to Britain, 8.9 percent of the total as against 9.3 percent. Again, within a few years of the war, by 1926-27 Germany had almost regained its former position and was taking 7.3 percent, whereas the British share had dropped to 8.4 percent. Looking on the other side of the balance sheet at imports, it appears that Britain has done better than in exports, though here also the British share has been declining. In 1913-14 it supplied 35.1 percent of the total; by 1926-27 only 27 percent and in 1936-37, despite the Ottawa Agreement, its share had fallen to 18.9 percent. Meanwhile imports from Japan were increasing. In 1903-4 it supplied only 3.4 percent. Ten years later it headed the list of foreign shipping entering Rangoon, and by 1926-27 its share of the imports had risen to 6.9 percent, while in 1936-37 again, despite the Ottawa Agreement, it had risen to 10.9 percent. In respect of trade with Burma it was in fact India rather than Britain that gained by the Ottawa Agreement. Certainly Britain has profited by the development of Burma. But it has drawn merely business profits such as a nation of shopkeepers may regard as its legitimate due; there has been no jealousy of foreign enterprise, and Burma has been an open shop in which all comers have been allowed a fair field and no favor.

Still less has there been any jealousy of foreign enterprise in the promotion of welfare. Burma had its own schools and the Government has consistently endeavored to modernize these schools, while in respect of Western education, it is only by the

free scope allowed to foreign missionary organizations supported by the contributions of the faithful in America and elsewhere that such rapid educational progress has been possible. Many Englishmen in Burma have indeed felt sometimes that the lead in cultural development has been too readily conceded to French and Italian Roman Catholics and to the various American missions, notably the American Baptist Mission—not to mention Hollywood. Here again there has been a fair field and no favor. The remarkable progress of Christianity among the Karens is a tribute to missionary zeal, but no less to the British Government which has protected and encouraged missionaries, and they have been just as free to spread Christianity among Burmese Buddhists. Not infrequently one hears suggestions that British care for native welfare is a new feature, a spasm of penitent imperialism on its deathbed. Nothing could be further from the truth. From their first arrival the British have fostered education, and within a very few years Burman, educated in native or Western schools, were entrusted with the administration of law and justice as judges and magistrates. Long before the close of the nineteenth century, local schools were supplying practically the whole staff employed by the Government in administrative routine, and the outstanding problem in respect of education has been to provide suitable employment and adequate remuneration for all those who crowded the schools with a view to make their living. It has also been the consistent policy of Government to provide medical care on Western lines, though in this matter, as in other parts of the tropics, there has been little success in inducing the people to profit by it. From the beginning of British rule also there have been attempts to improve native agriculture, and during the present century care for this aspect of Burman life has called into existence an active Agricultural Service. Also, and especially during the present century, there have been attempts to provide the cultivators with better facilities for obtaining credit. Mr. Andrus draws attention to these various benevolent activities, but in recommending his book to the American public it would seem well to stress the fact that this care for native welfare is nothing new; it dates from the earliest days of British

rule and there have been repeated endeavors to bring the machinery of welfare up to date.

During the greater part of the nineteenth century everyone believed in *laissez faire* and economic freedom as the key to progress and welfare, and Britain conferred on Burma the boon of economic freedom. Everyone believed in equal law and under British rule everyone was made equal before the law; it may fairly be said that in both criminal and civil law there was one law for all alike—white and colored, European and Asiatic, Briton and Burman. Everyone believed in education. The British Government tried to modernize the native schools and supplemented them with Western schools. Then during the course of the nineteenth century the doctrine of *laissez faire* yielded place in Europe to ideas of efficiency and social justice. The Government of Burma, inspired by these ideas, introduced new welfare machinery and multiplied its administrative activities with a view to increasing production and enhancing welfare. New or newly enlarged agricultural, veterinary, and other services aimed to improve agricultural technique, and the public health service inculcated new standards of rural hygiene. Then, rather later, in the present century, with the general acceptance in Europe of the principles of democracy and self-determination, the Government constructed democratic machinery on an up-to-date model; it introduced practically household suffrage with no distinction of sex and, with a liberality that might have been thought rash even in America, conferred the franchise on adolescents of eighteen. If good intentions furnished a sufficient claim to gratitude one might well expect the firmest attachment on the part of Burmans to the British connection.

How is it then, critics may ask, that Burmans have often shown themselves restive under British rule and that in the recent elections an overwhelming majority voted in favor of independence. One answer is that good intentions proverbially pave the way to evil. Economic freedom allowed the cultivators to pile up debt and lose their land to Indian moneylenders, while, merely by the operation of free competition, commerce and industry and the whole control of economic life passed increasingly into foreign hands. Law multiplied litigation and

served as the handmaid of antisocial economic forces, though proving unable to cope with a steadily increasing volume of crime. Education lost its spiritual content and came to be regarded merely as the means of gaining a livelihood, the services charged with enhancing production and welfare were unwelcome to the people whom they were supposed to be serving, and appeared to them only too often as instruments of oppression and exaction; and democratic machinery fostered distrust and political discontent. All these things, so well interwoven and working so well in Britain, went awry in Burma.

Yet, as Mr. Andrus shows, the common man in Burma derived many benefits from the introduction of British rule. It is true that Burmese civilization had many attractive features. In every village the Buddhist monks, in a community completely free from scandal, imparted an education on democratic principles to all the boys of the village, rich and poor, well-born and lowly-born, instructing them in the elements of letters, and practical morality. The monastic order, spread over the whole country, was influential but not oppressive, and friendly to the State, instead of causing division by their rival claims, lending each other mutual support. The women enjoyed greater freedom in some ways than in other countries of the tropics, but had not a freedom unparalleled elsewhere in Asia and, until recently, exceptional in the West. And if one aim of the State be the organization of happiness, then, by general consent, the people have been more light-hearted than the Burmans. There was a happiness that the frequent and severe wars and political catastrophes must have interrupted but did not dispel. Yet this civilization, despite its attractive features, had also its limitations. The whole political system was based not on law but on personal authority, and anyone in a position of authority could within customary limits dispose arbitrarily of the person and property of those subject to his command. Everyone had to comply with sumptuary rules dictating the style of house and clothing appropriate to his station in life; even the funeral ceremonies and types of coffin were similarly regulated. And everyone was liable to compulsory service, unpaid or underpaid, in the army and on public works. British rule was welcome

in liberating them from the various restrictions and abuses of Burmese rule and custom. It brought new freedom and new opportunities to gratify new wants, and in all such material aspects of life it promoted a higher standard of living.

But this was merely the first effect of British rule. As appears from the account given by Mr. Andrus, the sequel was less happy. For, though liberating the people from arbitrary oppression, it brought them under bondage to economic law. Here, it would seem, we may find an explanation why the good intentions of British rule were so largely frustrated. In opening up Burma to the world, the British Government purged the abuses of Burmese rule, but it swept away good and bad together. Possibly nothing less catastrophic would have cleared the way for reconstruction, but the results were in many ways unfortunate. Yet it would have been difficult to avoid them, for the British were dealing with a situation wholly foreign to their traditions and ideas. In Europe during the last three hundred years there had been a growing tendency to base economic and social relations on reason, impersonal law, and individual rights, and in this process Britain has led the way. This has been possible because our godly heritage from Greece and Rome under the vitalizing influence of Christianity has created a social order strong enough to confine antisocial economic forces within the bounds of civic welfare. In America, when the American way of life was threatened by the flood of immigration, measures were adopted to dam the stream, and the system of public education has been forged into a system of social education desired to promote the assimilation of alien elements. In Britain such precautions have been unnecessary, and in Burma, where they were needed, they were disregarded. Thus when the social order, resting on authority and custom, was suddenly brought into contact with the economic forces liberated under British rule, it was perverted into a business concern. And in this business concern, as Mr. Andrus demonstrates convincingly, Burmans play a very minor part.

Welfare, however, is a social good, and social welfare is a necessary condition of both individual welfare and sound economic progress. Regarding the course and nature of the eco-

conomic development of Burma in the past. Mr. Anders says much that deserves close attention, but he would seem to have accepted without sufficiently close examination the commonly prevailing view that even during recent years the standard of living has been rising. Where economic forces have been at play, the weakest goes to the wall, and in the economic development of Burma the Burmans have been in the unfortunate position of the weakest. Relatively, at least, they are poorer than before. Under Burmese rule the Burman was a poor man in a poor country; now he is a poor man in a comparatively rich country. With cultivators getting more deeply into debt and working as hired laborers on land which formerly they owned, it would be strange if they were growing richer. There is indeed positive evidence to the contrary. In a recent survey it has been estimated that during the last twenty years "rice utilisation per capita appears to have fallen by nearly 25 per cent."¹ The statistical basis of this estimate was insecure, and it is improbable that the fall exceeds 10 percent, but consumption certainly has not risen. The import of chief interest to the common man is clothing, and during the present century the import of cotton goods has barely kept pace with the growth of population, while local production has declined, so that in this respect also the people would seem to be less well off than formerly. Moreover in the import of silk goods and other luxury products there has been a very sharp decline, and, taking imports for native consumption as a whole, the value, in proportion to the population, has fallen. The first effect of the economic forces liberated under British rule was to raise the standard of living, under their further operation there has been a failure to maintain this standard.

In this connection two points deserve special attention. The first is the remarkable fact that the decline in the standard of living occurred just when the Government was redoubling its efforts to promote welfare; in the disintegration of society under the dominance of economic forces, attempts to promote individual welfare were destined to frustration. The second fact is even more remarkable. For the decline proceeded un-

¹ V. D. Wickizer and M. K. Bennett, *Rice Economy of Monsoon Asia* (Food Research Institute, Stanford, 1941), p. 216.

checked despite the introduction of constitutional reforms on democratic lines purporting to endow Burmans with new opportunities to enhance national welfare. The explanation, however, is not far to seek. In a united society democratic institutions are a sign of strength; but where they are not a sign of strength they are a source of weakness. In the divided society of Burma, with Europeans, Indians, Chinese, and Burmans united only in the pursuit of individual gain, democratic machinery produced a government no stronger or better able to control economic forces than the colonial rule which it replaced. And while the rich, the foreign element, grew richer, the poor, comprising the great mass of the population, grew poorer.

The common man had a substantial grievance in the loss of his land to Indian moneylenders, and the educated classes felt a natural resentment at seeing all the leading positions in industry and commerce in the hands of foreigners. Yet Burmans still enjoyed a very much higher standard of living than the people of India, and it is questionable how far economic conditions were directly responsible for political unrest. The wave of nationalism which has swept over the East was a far more potent factor. The British Government, despite its benevolent intentions, never succeeded in capturing the imagination of the people; it remained a foreign government to which the people as a whole felt no instinctive loyalty. It is true that modern nationalism was a late growth in Burma, but this was from ignorance of the modern world and not for lack of national sentiment and native patriotism. Until recently this sentiment found expression only in sporadic, futile insurrections among the uneducated peasantry. It was the victory of Japan over Russia that first inspired some of the educated classes with the hope of regaining their national independence through Western education and first turned their thoughts in the direction of Japan. Then, with the doctrine of self-determination gaining currency during World War I, and with the grant of a constitution on democratic lines, nationalists looked to gain freedom through their numerical superiority. Both hopes were vain. Neither Western education nor a wide franchise could prevail against the military and economic superiority of Europeans. It

is not strange then that at the beginning of the recent war many Burmans turned eagerly to Japan for help.

Not the least valuable feature of this book is the account of Burma under Japanese rule. Burmans soon learned that they had gained little by the change of masters. But this did not reconcile them to British rule. Now the bold decision of Mr. Attlee to give Burmans the choice of independence has created a friendlier attitude. For my part I hold firmly that nothing less than independence will serve to convert nationalism from a destructive fever into a creative force. Yet independence is merely a condition of welfare and not a cause of welfare. It is necessary to recognize that at present, after a hundred years of foreign rule in which military and economic control has lain in foreign hands, Burma cannot stand alone. It is necessary also to recognize that only the educated classes, and not even all of these, realize this fact. Burma needs help and, if Burmans will accept it, Britain is best able to give the help it needs. In our own interest we must try to help them. Our interest and that of the world in general demands the speedy restoration of order so that it shall once again provide a field for the investment of foreign capital, under due conditions as to national well being, and shall yield the rice and oil and other products that the whole world wants. How best to help them is a problem for British statesmanship, but if we solve the problem successfully it is not improbable that within a few years, when we have enabled Burma to stand alone without support, its people will be clamoring for a closer association with the British Commonwealth. The first step toward the solution of the problem is to recognize the difficulty. In this matter the objective survey of the situation by Mr. Andrus should be most useful and, writing as an American, it is with gratitude that I recommend his book not only to the American public, but to British and, not least, to Burman readers.

J. S. FURNIVALL

CAMBRIDGE, ENGLAND

July 31, 1947

PREFACE

AN ALL-BURMESE constituent assembly has now completed a constitution for a self-governing Burma. According to the Attlee-Aung San Agreement of January 27, 1947, this constitution may provide for either dominion status or independence, according to freely expressed Burmese wishes. Thus, a little over sixty years after the last Burmese king was deposed, a new country, completely different from pre-British Burma, is about to join the family of nations. It is believed that there will be sufficient interest in the economic life of this newcomer to make the publication of the present study timely. Burma has great possibilities, both as to international trade and as to domestic production, and the new Burma may develop fresh economic contacts, with consequent repercussions in foreign countries. Burma was first heard of by most literate people of the present generation in the Western world when the Burma Road to China was completed. By the time the Japanese invaders made Burma a battlefield, that country was very well known indeed, and it now seems unlikely to relapse into its prewar obscurity.

One of the results of the war was the temporary impoverishment of the country, much of its transportation and industry being destroyed. But Burma's economy is so largely based on agriculture, forestry, and extraction of minerals that welcome signs of a prompt and healthy recovery from the ravages of war are already evident. Given a solution of the vexing agrarian problems, and domestic and international peace, Burma should continue to be the most prosperous country, from the standpoint of the common people, in that part of the world.

This study attempts to present a survey of the basic facts

and statistics of the Burmese economy as it existed in 1939-47, with documentation for those desirous of further information on the subject. Where the writer believes that popular ideas are in error, an attempt is made to set the record straight, but the emphasis is not on controversy, and no effort is made to support any school of thought.

Had J. S. Furnivall consented to bring out a third edition of his *Political Economy of Burma* this book might never have been written. However, numerous aspects of Burmese economy not covered in *Political Economy of Burma* are dealt with in the present study, although those desirous of reading the standard work on Burmese economic history should refer to Mr. Furnivall's classic.

A wartime survey of the economy of Burma, completed in the United States Department of Commerce in 1943, was the parent of this book. With the permission of Mr. Charles K. Moser, Chief, Far Eastern Division, the map used in the earlier work is reproduced facing page 3 in the present volume. Mr. Moser and his assistant, Dr. Melville H. Walker, gave invaluable direction to the original study. Subsequently, while the writer was stationed in India in 1944-45 this study was revised, and several officials of the Government of Burma—then in exile at Simla—gave the assistance which is noted in the following paragraph. Further revisions have been made up to the time of going to press.

The author gratefully acknowledges the assistance of the following officers of the Government of Burma, who kindly checked various chapters of the manuscript for errors of fact. In many cases they made valuable suggestions for the addition of useful data:

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J. RUSSELL ANDRUS

WASHINGTON, D.C.

August 1947

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GEOGRAPHIC BACKGROUND

ALTHOUGH Marco Polo reportedly used the Burma route for one of his trips between Italy and China, that country has probably been less known to Americans than any other part of south-east Asia, at least until the opening of the famed Burma Road in 1939. That road dramatized Burma's position as "China's Back Door." Had it not been for the many excellent pictures, and the vivid descriptions of the difficulties of road-building across steep mountain ranges separating the deep river beds, that phrase might have led to an underestimate of the extent to which Burma is cut off from its great neighbors, India and China, as well as from Siam, French Indo-China, and Tibet.

For many centuries individual explorers and a few muleteers and merchants have crossed Burma's land frontiers, but such traffic was never sufficient to permit Burma to be assimilated by either of its two great neighbors. Sea traffic is encouraged by a long coastline and a few fair harbors, but throughout most of its history Burma has had little sea traffic and hence has been largely a hermit nation. Mountain passes to the north are eight to ten thousand feet high, yet Buddhist missionaries passed from Burma to China, while quinquennial missions from Burma long carried gifts to Cathay which were perhaps inaccurately regarded as "tribute."

The inaccessibility of Burma to Asiatic conquerors, coupled with a lack of development of the art of sea warfare by potential aggressors, helped insure Burmese independence¹ until the British occupation in the nineteenth century. The coming

¹ Except for the shadowy claims of China to suzerainty over Burma.

of the British coincided approximately with great improvements in maritime transport, and now air transport also bids fair to play a great part in placing Burma squarely on one of the high-roads of the world.

Burma's area of 261,610 square miles roughly corresponds in area to the northeast corner of the United States, from Ohio to Maryland, inclusive. Most of this area, and all but a very small part of the population, lies within the tropics, but the wet, mountainous northern hills touch Tibet at a point beyond 28° North Latitude. Burma extends south to Victoria Point—about 1,300 air miles. The population of around seventeen million places Burma fifth in the British Empire, following India, Pakistan, the United Kingdom, and Nigeria.

GEOGRAPHICAL DIVISIONS

The most common geographical division of Burma is into Upper Burma and Lower Burma. The dividing line is that between British Burma and the Burma of the kings between 1852 and 1886, the line running somewhat north of Prome and Toungoo, all of Arakan being considered Lower Burma for this purpose. This division has the merit of coinciding with the rather precipitous drop in rainfall from the 80-250 inches of Lower Burma to the 25-50 inches of the Dry Zone. It has the drawback that north of the Dry Zone there is the Upper Burma Wet Zone, from Katha and Blanno to the northern limits of the country, while mountains and valleys run mostly from north to south, neither Upper Burma nor Lower Burma being homogeneous.

Dr. Dudley Stamp, outstanding geographer of Burma, has divided Burma into nine divisions, shown by number on the map, permission to reproduce which has been given by the United States Department of Commerce. The divisions are as follows:

1. *Arakan Coast*.—This narrow coastal fringe at Burma's extreme west was the scene of some fighting and much skirmishing throughout the period of Japanese occupation, and its location is well known. The Arakan Yomas (hills) separate

it from the rest of Burma, and its people speak a separate dialect of the Burmese language. Tidal streams are so numerous that there are said to be no less than 119 stream crossings between Chittagong (in Bengal) and Akyab, chief town of Arakan. In normal times traffic has always been chiefly by boat. The monsoon of May to October brings 150 to 200 inches of rain to this region, although just to the east, across the hills, rainfall is less than a fifth as great!

The larger streams have built up flat, fertile lowlands, with extensive paddy cultivation and fairly dense population. Thus Akyab District had a 1941 population density of 147, although some of the district consisted of thinly populated hills. About 25 percent of the district is covered with crops—mostly paddy.

The Taungup and An Passes into central Burma had very poor roads at the time of Japanese occupation, but Japanese logistic needs caused some improvement in this respect, thus partially ending Arakan's near-isolation from the rest of Burma.

2. *Arakan Yomas or Western Hills.* Dr. Stamp's second geographic division is the Arakan Yomas, with the north and south alignment typical of Burma. At the north they become known as the Chin Hills, and form the division between India and Burma. Ridges run in every direction. Bamboos are gradually replacing more valuable wood on the wet western slope. The eastern slope has valuable teak forests, not yet fully exploited, below the 3,000-foot level. Its highest point is Mount Victoria, whose summit is 10,400 feet above sea level.

The animistic Chins, who speak numerous dialects and provided levies for the Burma Rifles in the prewar period, furnish a sparse population for these hills.

The annual rainfall in the westward-sloping portion, known as the Arakan Hill Tracts, is officially estimated as 125 inches, yet conditions are such that very little use has been made of this abundance of water, and the population density in 1941 was but 18 per square mile—even lower than in the Chin Hills and the Northern Hills. Only Karenni, with a density of 16 per square mile, and the Upper Chindwin District, with 14, were more sparsely populated.

3. *The Shan Plateau.*—Skipping the more populous central portion of Burma, Dr. Stamp describes the Eastern States, or Shan Plateau. The 34 Shan States plus the Wa States and Karenni cover 60,589 square miles, 15,388 of which are in Kengtung and Mongpan—states which Japan "gave" to Siam in 1943. Maymyo and Mogoke are administratively included in Burma proper, but they and their surrounding regions are geographically part of the Shan Plateau.

There is no clear geographic demarcation between this plateau and the Yunnan Plateau of China to the north or Northern Siam to the southeast. On the west, however, the plateau ends rather abruptly, a few miles east of the main line of the Burma Railways, and there is almost as clear a demarcation at the foot of its western escarpment between the predominantly Burmese and the predominantly Shan-Tungthu-Karen populations. Evergreen forests cover much of this plateau, but in numerous areas, particularly along the western side, destructive methods of cultivation have ruined the forests and started serious erosion. In recent years a number of tung oil plantations have been created, potatoes, oranges, and other fruits and vegetables are grown near the two railway branch lines, and shipped to Mandalay, Rangoon, and the other chief towns.

Although the term "plateau" is probably correct on the whole, this tableland of crystalline and limestone rocks supports numerous ranges of hills, ordinarily with a north-south character. The great Salween River has cut out a deep gorge, as have some of its tributaries. Villages near Salween ferries are often perched sixty or more feet above the ordinary water level, because of the annual floods. An interesting feature of this region is the disappearance of some fairly large streams into the limestone surface—to re-emerge many miles away. The elevation is ordinarily 2,000 to 4,000 feet, but the peaks and ranges often rise to 6,000 or 8,000 feet.

The Shans normally inhabit the valleys and much of the flat tableland, while the more primitive animistic tribes live in the hills—chiefly, perhaps, to avoid the malaria of the plains, to which they are particularly susceptible. In Karenni the Karen

group of races (including Padaungs and Tountluns) made up nearly three-fourths of the population in 1931, most of the remainder belonging to the Shan race. The Padaungs—not very numerous even in Karenni—provide the overadvertised “long-necked ladies of Burma” who can more conveniently be seen in America by going to a circus than in Burma, where a trip by foot or pony to a remote village is necessary.

The Bawdwin and Mawchi Mines—among the most important in the world—are located in this area, while Kengtung State, at the east, is an important source of teak, and sometimes of opium as well. Lashio, in the Northern Shan States, is the southern terminus of the Burma Road.

The rainfall is officially estimated at 50 inches annually in the Northern Shan States and 45 inches in the Southern Shan States. Irrigation from mountain streams and lakes is fairly common, and hence the area is self-sufficient in rice. The estimated population density in 1941 was 32 per square mile in the Northern Shan States (which include Lashio, and the Bawdwin Mine) compared with 25 in the economically less important Southern Shan States and 16 in Karenni, which nevertheless included the Mawchi Mines.

4. *Tenasserim*.—About 500 miles of Burma's north-south length of 1,300 miles is accounted for by the narrow Tenasserim area, the southern part of which shares the northern section of the Malay Peninsula with Siam. The mountains are parallel to the coast, as are those of Arakan, and come even closer to the sea south of the Moulmein-Mylon area. The hills are granite and limestone. There are several small tidal streams which handicap road building, but not as much as in the case of Arakan. Tenasserim was annexed by the East India Company in 1826, along with Arakan.

The mountains to the east were not crossed by important roads until the Japanese period, and are quite sparsely populated. The heavy rainfall—about equal to that of Arakan, or around 200 inches—together with the latitude and soil conditions make this Burma's principal rubber-growing region.

Tenasserim contains practically all Burma's tin and tung-

sten production, except that at Mawchi, and was very rich in teakwood until wasteful exploitation in the nineteenth century left its mark. Flat areas around Moulmein and Thabon, near the mouth of the Salween, are densely populated by rice farmers. Official rainfall statistics show the highest rainfall average, 218 inches, in Thabon at the north.

5. *Northern Hills Region.* This large but rather sparsely populated region received world attention in 1944 with the launching of an Allied drive against the Japanese from the base at Ledo and along the now famous Ledo Road. This region consists largely of mountains, but Dr. Stamp draws his dividing lines to include considerable flat paddy and sugar cane land along the Irrawaddy and its tributaries. The southern part of this region, therefore, is fairly productive, and has a much denser population than the remainder. Only 6 percent of Mawmya District was cultivated, according to the 1931 Census. Doubtless, the percentage is even lower in the rest of the Northern Hills.

Some of the mountains rise to 20,000 feet, and to a considerable extent the watershed between the Irrawaddy and the Brahmaputra forms the dividing line between Burma and India. The Irrawaddy's two mother streams, the Mali Kha and the Nmai Kha, thus rise near the extreme north of the country, or around 28° North Latitude. The Chindwin rises to the west, and for some distance it flows close to the dividing line between Burma and Manipur (India) before reaching Kalewa, focal point for land routes to Imphal and India.

Official rainfall statistics for this hitherto remote area are not available, but American troops stationed there in 1944 claim that it almost disputes the world's rainfall record with Assam!

6. *The Dry Belt.*—The area in Central Burma with a rainfall of 23.91 inches (Pakokku) to 38.02 inches (Yamethin) is called the Dry Belt or the Dry Zone. On east and west it is bounded by high mountains, but has an elevation mostly under 500 feet. It is traditionally the home of the Burmese race, and has the greater part of the landmarks of Burmese civilization, including most of the former capitals. It is connected with several other parts of the country by road or water or both.

The dry climate makes the growing of rice feasible on very little unirrigated land, but the irrigated area is sufficient to make rice the most important single crop, even here. Millet, Sesamum, groundnuts (peanuts), cotton, and beans are all important dry zone crops, while fair amounts of gram, maize, vegetables, fruits, and sugar cane are also grown.

The Irrawaddy is joined by the Chindwin between Myingyan and Pakokku, and continues through the leading oil fields of Chauk and Yenangyaung. Such rainfall as there is often comes in downpours, perhaps as much as 5 inches falling in 24 hours. Hence there are numerous broad stream beds, dry most of the time. Along the river beds often stretch considerable areas of "kaing" cultivation—maize, tobacco, onions, and vegetables for the most part.

7. *The Lower Irrawaddy Valley and Delta.* Previously a thinly populated area, mostly given over to jungle, this part of Burma has, in the past century, become the most densely populated and richest part of the country. Rainfall varies from 113 inches annually in Hanthawaddy District to 47 inches at Prome, on the northern limits of the division. The 1931 Census lists 66 percent of the whole Delta as under cultivation, 9.2 percent of the cultivated area being covered with rice. Probably over half of Burma's normal 3,000,000 tons of rice export originates in this area, for rice can be grown without irrigation and with confidence that the rainfall will be suitable for the crop. In the southern portion transport by rail or road becomes impracticable, due to the labyrinth of streams, but nearly every family has a boat, and water transport is cheap and convenient. On the eastern border between this division and the Sittang Valley, is Rangoon, transportation hub and capital of the country.

The shore line is moving southward at the rate of about three miles in a century—a fairly rapid rate. Thus, it is believed that some of the most densely populated areas of the present day were under the sea when Burmese history began twelve or thirteen hundred years ago.² The Irrawaddy has eight principal distributaries.

² O. H. K. Spate, *Burma Setting* (Longmans, Green & Co., 1943).

Flooding of large areas is an annual occurrence, and elongated villages often occupy the higher and firmer ground of the Pegu Yoma foothills.

8. *The Pegu Yomas.*—These low hills seldom exceed 2,000 feet in elevation, but agriculture is uncommon, and the forests are rather thick, large quantities of teak being produced in the central part of the hills and floated or railed to Rangoon. There are a few cart roads and trails across these hills, but no motor roads. In a sense, the hill upon which Rangoon's great Shwe Dagon Pagoda stands is the southernmost tip of the Pegu Yomas, but it seems better to describe the Yomas as ending about twenty-five miles to the north. An extinct volcano, Mount Popa, is near the northern limits of the Pegu Yomas, and figures in countless Burmese stories and myths.

9. *The Sittang Valley.*—A narrow but fertile and densely populated valley lies between the Shan Plateau and the Pegu Yomas, providing the most direct road and rail connection between Rangoon and Mandalay. Rice is the only crop of importance, as the rainfall is over 100 inches annually except at Toungoo, where it declines to 83 inches, and Pyinmana, at its northern limit, with a rainfall believed to be around 60-70 inches. A few miles north of Pyinmana there is a precipitate decline in rainfall within a few miles, and the traveler is sometimes shown a spot from which it is obvious that the vegetation to the south is heavier, and of a different character than that visible from the same spot, looking to the north.

Toungoo and Pegu, the two chief towns (other than Rangoon) were both former capitals of Burma. The Sittang is unimportant in navigation because of a twice-daily tidal "bore"—a twelve-foot wave. The Pegu-Sittang Canal, however, carries a large quantity of traffic.

The Sittang itself comes out of the hills a few miles above Pyinmana, but geographers believe that the Irrawaddy formerly occupied this corridor, until "captured" by a tributary of the Chindwin which flowed southwest from somewhere around Mandalay.²

² O. H. K. Spate, *op. cit.*

CLIMATE

Burma's seasons are quite different from those in the temperate zones. The months April to May are the hottest, for in the latter part of April and May the sun's rays are practically vertical, and there is almost no rainfall. Relief from the heat is provided by the "breaking" of the monsoon (for most of the country) usually around the latter part of May. Rainfall in Lower Burma continues almost daily until September, there being intermittent showers in the latter part of September and much of October. November is a rather pleasant month throughout Burma, while December and January register temperatures as low as 60 degrees (the record low temperature at Rangoon is around 55 degrees) in Lower Burma and somewhat lower in the Dry Zone. The delta and coastal areas are always humid. The *Burma Handbook*, 1943, supplies the data shown in Table I showing mean monthly temperatures at Hmawbi (north of Rangoon), at Mahlaing (in the Dry Zone, near Meiktila), and at Akyab, on the Arakan Coast.

TABLE I
MEAN MONTHLY TEMPERATURES*

Location	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Hmawbi												
Max.	85	91	96	96	94	84	83	83	84	84	87	87
Min.	60	61	69	82	77	75	76	75	75	73	71	66
Mahlaing												
Max.	92	93	102	103	100	91	92	92	95	93	98	93
Min.	60	61	67	75	77	75	76	76	75	72	69	59
Akyab												
Max.	80	83	88	89	87	84	85	86	86	86	86	83
Min.	51	59	64	76	77	76	77	77	76	75	71	62

* *Burma Handbook*, published by the Government of Burma, 1943.

Morehead* gives the data (see Table 2, p. 10) on rainfall and temperatures in the seven most typical regions.

POLITICAL DIVISIONS

Politically, Burma is made up of eight divisions, two of which (Arakan and Federated Shan States) correspond to

* F. T. Morehead, *The Forests of Burma* (Longmans, Green & Co., 1944) p. 3.

TABLE 2
TYPICAL RAINFALL AND TEMPERATURES

Station	Geographic Division*	Average Annual Rainfall (inches)	Average Annual Temperature (Fahrenheit)	
			Maximum	Minimum
Myitkyina	5	79	92	50
Mandalay	6	33	102	59
Maymyo	3	59	84	39
Toungoo	8	83	100	57
Rangoon	7 and 8	99	98	64
Akyab	1	203	92	59
Tavoy	4	212	97	53

* According to the folded map which faces page 3. This column not in Morehead's work. Area 2 in the map, the Arakan Yomas and Chin Hills, was of practically no economic importance, and apparently had no weather station.

Dr. Stamp's geographic divisions. The divisions and their subdivisions, or districts, are as follows (see map facing p. 347):

Arakan Division	Pegu Division	Irrawaddy Division
Akyab	Rangoon Town	Bassein
Arakan Hill Tracts	Hanthawaddy	Myaungmya
Kyaukpyu	Insein	Maubin
Sandoway	Pegu	Pyapon
	Tharrawaddy	Henzada
	Prome	
Tenasserim Division	Magwe Division	Mandalay Division
Toungoo	Thayetmyo	Mandalay
Thaton	Magwe	Kyaukse
Salween	Minbu	Myingyan
Amherst	Pakokku	Meiktila
Tavoy	Chin Hills	Yamethin
Mergui		
Sagaing Division	Federated Shan States	
Sagaing	Northern Shan States	
Shwebo	Southern Shan States	
Lower Chindwin	Karenni ⁵	
Upper Chindwin	Wa States ⁶	
Katha		
Bhamo		
Myitkyina		
Naga Hills		

⁵ Theoretically, Karenni is not politically part of Burma. Actually, it was ruled from Taunggyi, by the Commissioner of the Shan States and his deputies.

⁶ The Wa States, on the Yunnan border, were under the general jurisdiction of the Commissioner of the Shan States, although not entirely assimilated in administration, prior to the Japanese invasion.

II

ECONOMIC HISTORY¹

PRE-BRITISH HISTORY

THE PRESENCE of rather extensive irrigation works, numerous village handicrafts, and a complicated social life, with its emphasis on co-operation, indicate that it is a mistake to regard pre-British Burmese economy as primitive or uncivilized. In many respects it may be compared with the medieval period in Europe.

The complex social system of the Upper Burma village dates by tradition from the time of Anawrata (A.D. 1044-1077) but the first historical record of its existence relates to the Revenue Inquest of King Tha Lun Min in 1637. The system was based on the various "regiments" or elements of the royal army--some villages being known as cavalry villages, while others were musketeer villages, etc., and everyone was presumed to belong to some such regiment or *athin*. Furnivall states that the two main divisions were the *ahmudan*, or people liable to regular public service, and the *athi*, who served in the army only in times of emergency, ordinarily getting off with the payment of taxes. The former were assigned land, on which they paid revenue to their superior officers. Ordinarily, when they moved from place to place they did not lose their status as members of the *athin*, and were considered to be under the jurisdiction of their own captains--not of the rulers of the villages in which they happened to reside. In other words, jurisdiction tended to be personal, not territorial.

¹ The standard work on this subject, to which the writer is very greatly indebted, is J. S. Furnivall's *Political Economy of Burma* (Rangoon, 1938).

The *athi* class, considered inferior socially to the *ahmudan*, consisted of cultivators, paying regular rent to the king. Even prior to the advent of the British the Burmese social system was in process of decay, and just after the middle of the last century King Mindon introduced the *thathameda* tax (which remotely resembles a head tax) in Upper Burma on a territorial basis.

Purnivall describes village life as follows:

In most villages the whole group of houses was surrounded by a thick fence or hedge, ordinarily of cactus or some other thorny shrub. There were two or more gates, and at each of them a watch tower, or *kin-dat*, where the villagers were expected to keep watch every night in twos and threes by turn. Within the fence, or just outside it in a separate enclosure, was a monastery, where all the boys of the village learned at least the alphabet and the elements of their religion, and all of them, rich and poor alike, shared in the menial duties of the establishment. Near the monastery there were pagodas, with resthouses which served for village meetings and for passing travellers, and close at hand there were the village wells in a small open space set round with shady trees beneath which the village children played. . . . Unless the village bordered on a stream there would be tanks for watering the cattle, with their catchment area strictly reserved by village custom against any encroachment of cultivation. Round the village there was usually an open space, the *yua upaza*, set apart as a public convenience and also used for threshing floors.

All these amenities of rural life had grown up gradually. . . . But there was no idea of common property in any of them. So long as the space set apart for threshing floors sufficed for all who wished to use it, all the cultivators of the village could thresh their crops there; but it did not belong to them in common. Usually the same people occupied the same corner year after year and if the pressure on the space increased each family was recognized as enjoying a prescriptive right over the plot that it had been accustomed to occupy. Similarly, vacant land within the village would be available for anyone to build on, but once he had occupied it, the site became his private property, and still belonged to him even if, as often happened, the whole village was abandoned. On many revenue maps there are such little groups of tiny holdings which represent a former village site. . . . A landless man could settle on occupied but uncultivated land, provided the owner made no objection and the land would then become the private property of

the settler. . . . Villagers, however, might object to a stranger settling on their land and it has been suggested in connection with the *athi* lands of Magwe District that the people regarded the village lands as common property, but this view is undoubtedly mistaken.

. . . Estates commonly remained undivided for several generations, during which a large number of people would come to own them as their joint property. Irrigated rice lands were usually the joint property of several families and in such cases various customs with regard to water rights and the maintenance of waterways were devised so as to equalise as far as possible the benefits and obligations of those sharing the water.

The craftsmen of Burma, however, catered to a considerable area—not to one village only, as in the typical Indian village. One village would specialize in pottery, for instance, more or less monopolizing the market for several villages around, buying its cart wheels from one village, its cart bodies from another, and its *dahs* (cutting implements) from still another. Exchange often took place through a system of "five-day bazaar," still common in the Shan States. Any given village would have its market day every fifth day, and some dealers would go in a circuit of five near-by villages, buying a given commodity in one and selling it in another. Sometimes the circuits overlapped, providing an opportunity for wider circulation of local produce.

It must be emphasized, however, that the Burmese stratification of society into *ahmudans*, *athi*, etc., did not mean the building up of a caste system. Such slight tendency as there might have been in this direction was definitely reversed even before the British period.

The social life of Lower Burma, part of the time under the Mons or Talaings—arch enemies of the Burmans—was similar to that of Upper Burma. However, the conquest of Pegu by Ava in 1757 resulted in the slaughter of a good part of the Mon population, with the result that social life had suffered an almost complete breakdown from which recovery was incomplete even by the time the British took over Lower Burma

² Furnival, *op. cit.*, pp. 41-43.

nearly a century later. The outstanding contrast during this period was that fishing and the production of salt from sea water occupied many of the villages of Lower Burma, whereas village life in Upper Burma was purely agricultural.

AGRICULTURAL DEVELOPMENT OF LOWER BURMA

The addition of Lower Burma to the possessions of the East India Company in 1852-53 brought in a large area of potentially rich but uncultivated land. The few farmers then tilling the land in this area would abandon a field, after a few crops, for another with unimpaired fertility—a method resembling the *taungya* (hill-field) cultivation still practiced destructively in the mountains of Southeast Asia, Korea, etc. Land was more plentiful than cultivators, and was to be had free of charge. The living standards were low, and practically the whole of a family's food supply was produced by the exertions of the various members of the family, for rice, plantains and other fruits, vegetables, jungle roots, and herbs, fish, and sometimes salt could all be had by a sufficient exertion.

There sprang up in Arakan and in Lower Burma around the middle of the century a small trade in rice, destined for Europe, with textiles and other Western commodities provided in exchange. The haul around South Africa was so long, however, as to limit the quantity exported, exports in 1865-66 being estimated at a little over 400,000 tons of rice, compared with 3,000,000 tons during the decades prior to the Japanese invasion. The opening of the Suez Canal in 1869 provided a shorter route for that portion of the Burma rice which went to Europe (about half the total) and undoubtedly assisted in stimulating the taking up of the rich lands of the Irrawaddy Delta for the sole purpose of growing rice, chiefly for export.

As already noted, the Burmese social and economic system was decaying even prior to the advent of the British. The annexation of Lower Burma, however, roughly coincided with the introduction of steam navigation on a wide scale, the opening of the Suez Canal, and a great era of expansion in British overseas trade. The British connection thus drew Burmese

economy rather suddenly into intimate relationship with world economy. Whereas the economic life of Burma had been chiefly feudal, based upon custom and the use of very little money in effecting exchanges, modern economy of the type which now affected Burma was individualistic, exalting freedom of contract and freedom of enterprise. The liberal or laissez-faire school had won its classic victory a few years before in England with the repeal of the Corn Laws, and it was the belief of most thinkers and administrators in that country (and to a smaller extent in America, France, and other countries) that their system of political and economic philosophy was absolute and of universal application.

This resulted in the clarification of the concept of private property in Lower Burma, with division of each estate after death the customary procedure. When immigrants from Upper Burma found it necessary to borrow funds with which to support themselves while clearing away the jungle and building the *kazins* or small embankments, preparatory to growing and reaping their first crops, they soon found it possible to secure all necessary funds from the Chettyars, a caste of South Indian moneylenders. The cultivators were quite unaccustomed to Western legal processes, or to calculations of interest, in connection with the productivity of their land, so they readily signed agreements calling for the payment of interest at rates varying from 15 percent to 36 percent per annum.

Moreover, the immigration from Upper Burma was on an individual, not a group, basis, and Burmans accustomed to owing loyalty to their own captains, perhaps in a different village, had to accustom themselves to the geographic basis of administration; for the headmen of each village now had jurisdiction over all its residents. One profound student of the problem describes Burma at this time as "a country which had lost its traditional social system and in the swirling tide of economic forces and an unfamiliar system of law found it impossible to find its feet for sufficiently long to devise another."

The immigration of Indians was for a time encouraged by the government, but voluntary immigration from Upper Burma,

both before and after the annexation of that area in 1886, eventually filled up most of the better land in the lower Irrawaddy, Sittang, and Salween valleys. The land was wrested from the hands of its original owners in a fairly brief period, but when Chettyars were the new owners they were very unwilling to sell it, much preferring moneylending to agriculture.

Whereas agriculture had previously been on a family or domestic basis, it promptly became commercial, its production was for the market (chiefly the export market), and concentration on the single crop was so great that many commodities of household use were now imported. It appears that there was an increase in the standard of living at the same time, and new, hitherto unknown, commodities were introduced, particularly into the homes of the larger landowners.

Furnivall has called the type of agriculture which developed in Lower Burma at this time "Industrial Agriculture" because of its similarity, in some respects, to the factory system. Indian immigrants came on a seasonal basis to plant, trap, and pull the crop, while finance, landowning, and the entrepreneurial function of the tenant corresponded loosely to the division of labor found in industry. While it may be argued that conditions were still so far different from those of a large factory as to make the comparison far-fetched, it must be conceded that the aspects of Burma's development and the degree of division of labor are uncommon among agricultural communities.

The great achievement of the Public Works Department in protecting large areas in the Irrawaddy Delta from flood should not be neglected, nor the work of those who provided riverine transport and modern mills in Rangoon, Akyab, Havsein, and Moulmein for handling the world's greatest rice export.

AGRICULTURAL DEVELOPMENT OF UPPER BURMA

Upper Burma has been the "center of the Burmese nation" for many centuries, during which it was never as sparsely populated as was Lower Burma at the time of the British occupation. Moreover, it was always overwhelmingly agricultural,

whereas salt extraction and fishing were important occupations which vied with agriculture in the south. Again, the climate and soil of Upper Burma present a much greater variety, and call for the planting of a number of different crops, whereas rice is the only crop of importance in Lower Burma because of the uniformly heavy rainfall.

The rather complicated nature of Upper Burmese social life was demonstrated in the quotation near the beginning of this chapter. Land was divided into three chief classes—royal, official, and private. Furnivall states that official land, and even royal land, tended to become private property. The former category signified "land which had been bestowed as an appanage of office, or as a trust to be administered. Usually such lands originated in a grant to the head of a regiment or order, to be given out among his men for residence, subsistence and cultivation" All waste land, and land confiscated for rebellion, etc., was state or royal land, but by the time of British occupation of Upper Burma in 1886 the distinctions between the three classes of land were not very clear.

Owing largely to the Buddhist inheritance law—equal division of land and property among all children—large estates were the exception in Upper Burma, only 32 percent of the land in Upper Burma in 1939 being let to tenants against 59 percent in Lower Burma. The large estate in Upper Burma is typically the property of a group of relatives and is left undivided by mutual consent. On the other hand, there is a tendency toward undue fragmentation of holdings in some areas of Upper Burma, although the problem is yet of very little importance.

Perhaps the chief change in the agriculture of Upper Burma since 1886 has been the introduction of a number of new crops. Sugar cane, groundnuts (peanuts), some types of beans, and pigeon peas are the most prominent additions to the rice, cotton, millet, and *Sesamum* which have been cultivated in Upper Burma for centuries. Groundnut was introduced about 1906, and covered 781,000 acres in 1940-41.⁴ An extension of the

³ Furnivall, *op. cit.*, p. 99.

⁴ *Season and Crop Report, 1940-41.*

3,000,000 tons by 1931 and as high as 3,500,000 tons in some of the ensuing years.⁵

Similarly, teakwood exports totaled 67,600 tons in 1856-57 (two-thirds of the total consisting of wood floated down the Salween from Karenni and Thailand), passed the 100,000 mark around 1879, and have exceeded 200,000 long tons per year since the first World War.⁶

Imports consisted not only of textiles and a great variety of other consumption goods, but also of the machinery necessary for the mines, oil fields, rice mills, sawmills, and other factories, as well as the equipment with which to develop the country's rail, road, and river transport. Virtually none of this machinery has ever been manufactured within Burma.

COMMERCIAL AND INDUSTRIAL DEVELOPMENT SINCE 1852

As indicated above, British and Indian firms and merchants developed practically all the export trade of Burma, and a large share of the internal trade. This situation did not change much right up to the time of the Japanese invasion although one or two Burmese firms began to take a modest share in wholesale and export trade, and numerous Burmans held responsible positions with the leading British firms.

Furnivall states that Burmese industry actually retrogressed in the past century, so far as the share of the Burmans is concerned. He cites the decline in the numerous household industries whereby artisans supplied their own and surrounding villages with the necessities of life. Imports put an end to most such small-scale enterprises, except in areas remote from modern means of transportation.

Indians were able to secure most of the jobs in factories, both because they had had more experience with modern industry in their own country and were perhaps more docile and steady, and because Burmans preferred the more familiar life of the farmer, with ample land available for the more ambitious.

⁵ *Burma Rice*, Burma Pamphlet No. 4 (Longmans, Green & Co., 1944).

⁶ *Burma Handbook* (1943), published by the Government of Burma.

The gas engine, however, came into prominence after the Burman had become somewhat acquainted with modern economic life, and Burmans have held their own as mechanics, truck drivers, etc. They have also done well in Burma's small-scale electric supply industry.

Rice mills grew in numbers at approximately the same rate as the growth of rice exports. Small mills throughout the rice-growing areas supplanted hand pounding as the chief method of preparing unhusked rice (paddy) for the pot. This change was not an unmixed blessing, for milled rice is ordinarily so well polished as to remove some of the most valuable nutritive elements.

Sawmills, likewise, developed with the teak industry, and a few mills and many saw pits catered to the growing domestic market. Particularly after the start of the twentieth century there were extensive developments in the mining and petroleum industries. However, Burma never lost its essentially agricultural character.

The recent economic pressure which caused Burmans to turn to industrial occupations in the 1920's and thereafter are well summarized by the 1931 Census as follows:

During the twenty or thirty years which followed the annexation of Upper Burma there was particularly rapid extension of cultivation, and while the indigenous population was confining itself largely to agricultural extension the deficiency of labor in the commercial and industrial occupations was filled by immigrant races, mainly Indians. But . . . the land which can be brought under cultivation without a large expenditure of capital is now exceedingly limited in many parts of the province. The Burman has therefore endeavored to obtain a share in the industrial life of the province and has come into competition with the Indian. Much of the work that is at present done by Indians could be done by Burmans, and it is probable that there will be keener competition for this work in the future. For the more skilled occupations, such as those connected with engineering in all its branches, the Burman would appear to be temperamentally suited, but his lack of training is often a drawback. As regards commerce it remains to be seen whether the Burman will compete successfully. According to the 1901 Census Report . . . "the Burman, as we know him, is

essentially a non-migratory, unbusiness-like, irresponsible creature, perfectly incapable of sustained effort, content with what can be gained by a minimum of toil." This may be true of the Burman of thirty years ago but it does not quite fit the Burman of today. Thirty years ago when land was plentiful and there was not much difficulty in making a living the Burman presumably did not see the force of working a whole day if he could get what he wanted by working half a day. But conditions are very different now and one wonders what the Census Superintendent of 1901 would have said if he had seen Burman gangs of coolies working in Rangoon . . . ?

¹ *Census of India, 1901, Volume XI, Burma, Part I, "Report,"* p. 34.

III

THE PEOPLE

BURMA, with the exception of some hill areas, is fortunate in having a fairly homogeneous population, without the communal problems which afflict some neighboring countries. This is partially due to the geographic barriers provided by the surrounding mountains and partially to the fact that the Burmans appear largely to have "liquidated" a large proportion of the races previously inhabiting Burma, and to have absorbed most of the remainder.

POPULATION TRENDS SINCE 1826

Because Burma of a century ago was a very sparsely populated country by Oriental standards it has been possible for population to increase by as great a proportion as in most other countries in that part of the world without producing a "population problem." The total population increased from an estimated 4,000,000 in 1826¹ to more than four times that figure in 1941. Arakan and Tenasserim, which were added to the East India Company's domain in 1826, had an estimated population of 294,000, but by 1850, just before the addition of Lower Burma, this figure stood at 586,000—an apparent doubling of the population in fifteen years! In 1856 the population of British Burma, including Lower Burma, was reported as 1,381,000. This figure is perhaps an underestimate, for nine years later, in 1865, the estimate was 2,210,000—an increase of 60 percent, or between 8 and 9 percent per year! The regular

¹*Burma Handbook* (published by the Government of Burma, Simla, 1943).

census has been taken since 1872, and is believed to have increased in efficiency until it compares very favorably with other censuses in that part of the world. A portion of the increase in population may perhaps be attributed to this increase in efficiency, but by 1921 (if not before) it probably approached the high standards of the 1931 and 1941 censuses. Hence, increases since 1921 are thought to be about as shown by census returns.

The 1872 Census included only Lower Burma (of which Tenasserim and Arakan were parts). Upper Burma was added in the 1891 Census, and most of the Shan States and Karenni were included with Upper Burma from 1901. However, even in 1941 the Census covered but 233,492 of Burma's 261,610 square miles, the remainder being wild, inaccessible areas in the northeast and north, believed to have a very sparse population. The *Burma Handbook*, 1943, gives the following population (Table 3).²

TABLE 3
GROWTH IN BURMA'S POPULATION

Year	Lower Burma	Upper Burma	Total
1872	2,590,332	.....	.....
1881	3,567,211	.....	.....
1891	4,408,466	3,313,587	7,722,053
1901	5,405,967	5,084,657	10,490,624
1911	6,212,412	5,902,805	12,115,217
1921	6,862,106	6,350,086	13,212,192
1931	7,765,873	6,881,883	14,647,756
1941	8,917,533	7,906,265	16,823,798

It will be noted that the decennial increase in population exceeded 10 percent in every decade except 1911 to 1921, during which time the influenza epidemic following World War I appears to have retarded population increases in Burma as in many other countries. In the decade 1931-41 the population increase was about 1.4 percent per annum—exceeding that of most countries. Projection of population trends is seldom safe, but if that rate continues until 1961 Burma's total population will exceed 21,000,000, or somewhat more than the present population of Mexico.

² *Op. cit.*, p. 10. Slight corrections have been made in the figures for 1931.

SUMMARY OF 1941 CENSUS RESULTS

Unfortunately the 1941 Census Office remained in Burma during the evacuation of 1942, and with it remained almost all data except for two pages, which are summaries of 1941-42. There has been no report, up to May 1947, of the recovery of census records since the evacuation of the Japanese. Table 4 gives figures for the seven divisions and the Eastern States (Shan States, Karenni, and the Wa States) only.

TABLE 4
POPULATION BY DIVISIONS IN 1941 AND 1942

Division	Area in square miles		Population in 1941	Population in 1942
	Surveyed	Unsurveyed		
Arakan	16,601	14,255	1,300,000	1,300,000
Pegu	13,729	2,011,112	2,011,112	2,011,112
Irrawaddy	13,400	2,000,000	2,000,000	2,000,000
Tenasserim	27,004	2,110,000	2,110,000	2,110,000
Magwe	27,003	1,200,000	1,200,000	1,200,000
Mandalay	12,504	1,200,000	1,200,000	1,200,000
Sagaing	30,000	2,000,000	2,000,000	2,000,000
Eastern States	1,000	1,000,000	1,000,000	1,000,000
Burma Total	203,492	16,200,000	16,200,000	16,200,000
Area excluded from Census	29,118			

It will be noted that Burma's population was fairly evenly divided between the eight administrative divisions. Pegu and Irrawaddy divisions, sharing the delta of the Irrawaddy, quite naturally had the greatest population densities and the greatest total populations. Large Sagaing Division came next, including as it did some rather densely populated irrigated tracts at the south to balance a great expanse of thinly populated northern hills. If the 1941 Census erred by counting many people from the count, it was probably in the relatively inaccessible parts of Sagaing Division and the Eastern States.

POPULATION DENSITIES

Burma's density was the lowest of that of any country in Southeast Asia and environs. Table 5 sets forth comparative population densities.

One factor making for a low density in Burma, in addition to those factors mentioned earlier in this chapter, is the absence

of large cities other than Rangoon with its 501,219 population and Mandalay with 163,527. In other words, Burma is overwhelmingly rural. Another factor is the rather low proportion of the country's total area which consists of flat, well-watered, or easily irrigated land.

TABLE 5
POPULATION DENSITIES, SOUTHEAST ASIA, JAPAN,
CHINA, AND INDIA

Country	Latest Census	Density per Square Mile
Japan proper*	1940	496
China†	1937	250
India	1941	247
Philippines	1939	140
Malaya	1931	103
Neth. East Indies	1930	96
French Indo-China	1936	81
Siam	1937	73
Burma‡	1941	72

* Includes Hokkaido and Japanese Sakhalin.

† Includes Manchuria, but excludes Tibet, Sinkiang, and Mongolia. A rough estimate.

‡ Density of the 244,492 square miles included in the census. If the remaining 78,118 square miles were included, with a population as sparse as they are believed to contain, the figure would be around 65.

The political divisions do not correspond to the geographic divisions as set forth in the first chapter except for the Arakan Division. In most other cases, the same political division includes densely populated lowland riceland as well as sparsely populated hills or mountains. The population per square mile in 1941 of the eight "divisions" and of the most densely populated district within each division were as shown in Table 6.

TABLE 6
POPULATION DENSITIES IN DIVISIONS AND IN MOST DENSELY
POPULATED DISTRICTS, 1941
(Per square mile)

Division	Density	District	Density
Pegu	215*	Hanthawaddy	238
Irrawaddy	198	Maubin	261
Mandalay	153	Myingyan	199
Arakan	74	Akyah	147
Magwe	69	Magwe	150
Tenasserim	56	Thaon	122
Sagaing	46	Sagaing	206
Eastern States	28	Northern Shan States	32

* Rangoon town, with an area of 77 square miles and a population of 500,000 (501,219 by a different 1941 source) brings up the Pegu divisional average to 215. Without Rangoon the division's average would be 179. Rangoon's 1947 population is estimated at 600,000.

It will be noted that there is a great difference between population density in a whole division and that in the most densely populated district within the division. Even at that, certain districts in the list above, notably Magway, Mandalay, Mawlaik, and Thaton, contain thinly populated mountain or desert areas.

RELIGIOUS DISTRIBUTION IN 1931

The small fragment of the 1941 Census now available does not include figures of religious distribution, but there is no evidence of drastic changes in proportions since 1931 except for Hindus and Moslems (see second paragraph following), when the figures were those given in Table 7.

TABLE 7
DISTRIBUTION OF RELIGIONS IN BURMA, 1931 CENSUS

Religion	Actual Number	Per cent
Buddhist	12,148,047*	84.3
Animist	761,243	5.2
Moslem	564,819	4.1
Hindu	370,953	2.6
Christian	331,106	2.3
Others	49,319	.3
Total	14,647,497	100.0

* Including 122,945 pygmy, gnomes, etc.

Religion in Burma, as in the countries of southern Asia generally, plays a much more important part in economic and social life than in most Western countries. The begging bowls of the Buddhist monks daily receive contributions from a majority of the country's homes. Nearly all Burmese boys spend from a week to a few months or even years as novices in the monasteries. Burmans of wealth ordinarily aim to gain *kutho* or merit in succeeding incarnations by building pagodas or monasteries in this life. Countless pagodas mark the hill-tops throughout the entire area inhabited by Burmans and Shans, and give the country its most characteristic landmarks.

Perhaps the 1941 Census would have shown a marked decrease in the number of animists, and an increase in the

number and proportion of both Buddhists and Christians. As roads and modern transport bring backward hill tribes into contact with the Burmans and Shans of the lowlands, they discard their primitive animism unless they have already been converted to Christianity. However, it has been said that the only pure Buddhism, unmixed with animism, is that professed by the few Europeans who have donned the yellow robe of the monk. It is therefore impossible statistically to set forth the relative importance of Buddhism and animism. The Hindus were, with insignificant exceptions, immigrants from India or the children of immigrants, and the departure or death of nearly half the Indian population in 1942 and succeeding years has probably meant a corresponding decline in the numerical importance of Hinduism. The same is partially true of the Moslems, as the majority of Moslems were Indian immigrants, ordinarily men without their families. However, there were 171,912 Moslems who were listed as Indo-Burmese in race, besides 733 Moslems who were listed as belonging to indigenous races. Most of the 733 were Burmese women married to Indian or Indo-Burmese Moslem men, and necessarily converted to Islam. The much larger group, the Indo-Burmese, contained a normal proportion of women, so births in Moslem homes during the Japanese occupation must have been considerably greater than births in Hindu homes.

The Christians were mostly Karens and members of hill tribes, among whom missionaries have worked since the middle of the nineteenth century. They had access to the thousand-odd Christian schools and their rate of literacy was much above the provincial total. At one time they made up 22 percent of the student body of Rangoon University, as against 2.3 percent of the population of the country as a whole.

LANGUAGE DISTRIBUTION IN 1931

The census of Burma has not attempted to give complete figures of racial, as distinct from language, distribution because of the practical difficulties involved. The reasons are set forth in an interesting appendix to the 1931 Census, written by

Captain J. H. Green, F.R.A.I., I.A., part of which runs as follows:

Up to the present time, language has been the only basis of classification of the races and tribes of Burma. Language, undoubtedly, valuable as it is, when used as the sole basis of classification, and in the case of the races of Burma, has, I think, led to an over-stress on our racial classification. A linguistic connection denotes not only a contact between them or the ancestors of the races in question or a contact between them and a third race. Language, however, does give us a hint regarding the probable important factors, as migrations of people and cultural waves are normally inclined to follow the paths of least resistance which are so often the paths of language affinities.

Some of the races or tribes in Burma change their language almost as often as they change their clothes. Languages are changed by conquest, by absorption, by isolation and by a general tendency to adopt the language of a neighbor who is considered to belong to a more powerful, more numerous or more advanced race or tribe.

To obtain more accurate knowledge of the inter-relationships and culture of our tribes, a study of ethnology, anthropology and folklore is of the greatest importance. Unfortunately, practically nothing, so far, has been done in this respect, and races are becoming more and more mixed, and the threads more and more difficult to disentangle.^a

Burmans. It will be noted that the Burmans constitute roughly two-thirds of the total population, and in view of the emigration of a large proportion of the Indians the Burmese proportion of the population has probably increased since 1911. In view of the very considerable absorptive power of the Burmese race, it is likely that many children of people speaking minor languages and foreign languages in 1911 would now be listed as having Burmese as the mother tongue. Anthropologists believe that the Burmans came from Tibet or possibly Yunnan around the first half of the ninth century.^b They are much more closely related racially to the Chinese than to the Indians, in spite of the fact that Burma "faces" India across the Bay of Bengal, and is separated by difficult mountains from

^a Capt. J. H. Green, *Census of 1911, Part I, "A note on the Indigenous Races of Burma,"* p. 245.

^b B. R. Pearn, *Burma Background* (Longmans, Green & Co., 1943).

Tibet and China. Burma owes its Buddhist culture to India (and Ceylon) and there have been commercial and cultural interchanges between Burma and India for many centuries.

TABLE 8
LANGUAGE GROUPS IN BURMA, 1931

Language Group	Christianity Indefinite	Persons
<i>Indigenous</i>		
Burmese	16	9,862,694
Karen	17	1,341,066
Tai (Shan)	11	1,021,917
Kuki Chin	45	343,854
Mon	1	305,294
Palaung-Wa	11	176,024
Kachin	9	153,897
Lolo-Muhso	12	93,052
Sak	6	35,237
Mro	1	14,094
Malay	2	6,368
Naga	2	4,201
Man	2	947
<i>Foreign</i>		
Indian languages	26	1,079,820
Chinese languages	*	178,316
European Languages	15	27,895†
Others	11	2,821

* Not available, but probably a fairly large figure. Yunnanese, Fukienese, and Cantonese are the most important Chinese languages.

† As a cross check, it may be noted that 20,183 of the Christians were "Europeans" and 18,446 were "Anglo-Indians." Many of the latter must have listed Burmese as their "mother tongue" for census purposes, although they also spoke the language of their European fathers. The term "Anglo-Indians" as used in the 1931 Census includes Anglo-Burmans.

Burmans have been called "the Irish of the East who have won all hearts" by Sir Harcourt Butler, a former governor. Perhaps their outstanding traits are generosity and hospitality. They are also noted for great enthusiasm and activity followed by a sudden cooling of ardor, and for a democratic social system, with individual self-respect. They are slight of build, of medium height, and ordinarily medium brown in color, although individuals vary from almost black to a very fair complexion. Most of them take at least one bath per day, ordinarily around the village well, where mixed bathing takes place gracefully and with complete modesty, owing to skill in the adjustment of the *longyi* or circular skirt worn by me

and women alike. In contrast to his cleanliness as to his own person, the Burman often lives in a house surrounded by filth.

The devotion of the Burman to his religion has been suggested earlier in this chapter. The large number of monks and nuns—over 120,000 in 1931—testifies to the sincerity of Burman Buddhists who support so great a number. The Buddhist is almost always tolerant and kindly toward people of other faiths. However, in recent years numerous monks have dabbled in politics, with a resultant decline in the standing of the brotherhood.⁵ The political activities of the monks may be responsible for the few evidences of religious intolerance.

The Burmans are much more highly educated than the other indigenous races, except as the latter have become Christians and have taken advantage of the numerous mission schools. Burmans are also more prosperous, and occupy the richer valleys and the main lines of communication. With increased education and contacts with the outside world, they have become definitely nationalistic, and the experience of three years of Japanese-sponsored "independence" strengthened nationalistic sentiment greatly, even though disillusionment with the Japanese and their spurious independence was rather general throughout Burma by the middle of 1943.

The Burmans are very self-respecting, and their courtesy should never be mistaken for servility. Roughly corresponding to the Chinese "face" is the Burmese term *awzah*. This word means power and what goes with the wielding of power, and it has an important place in Burmese social intercourse. Village life is basically democratic, and women occupy a position of greater respect and influence than in most countries of Asia.

Karens.—The word *pwaggyinyaw* means both "Karen" and "human being" in the language of the Sgaws, largest of the Karen groups. Thus they are no less self-respecting than the Burmans, who appear to have followed them to Burma, and to have driven them into the less accessible jungles and hills where they carried on a simple agricultural and hunting life without benefit of a written language. They were animists or "spirit

⁵ George Appleton, *Buddhism in Burma* (Longmans, Green & Co., 1943).

worshippers" and in recent years have turned in large numbers to Buddhism and to Christianity. The Karen Buddhists are often assimilated by the Burmans, but the more highly educated and self-conscious Karen Christians form a distinct group. Some of them have even suggested setting aside a considerable section in southeastern Burma as a separate Karen state, or substate. Karens are stockier of build than the Burmans, have broader features, and are ordinarily a bit fairer in complexion. The typical Karen is more phlegmatic than the typical Burman, although exceptions are numerous. Most Karens live in the Irrawaddy Delta, the Sittang Valley, and Tenasserim, there being relatively few of them in the state of Karenni. They are overwhelmingly agriculturists, but some serve in the police, the armed forces, and in government offices.

Shans.—Inhabiting most of the "Eastern States" on the Shan Plateau, between China, Indo-China, Siam, and Burma proper, the Shans are closely related to the Thai of Siam and the Laotians of French Indo-China, as well as to many inhabitants of Hsip Sawng Panna, or the southernmost tip of Yunnan. They are much less advanced than their fellow Buddhists, the Burmans. Most Shans are simple agriculturists, formerly quite content with British rule exercised through the Shan Sawbwas (princes) of their thirty-two feudal states. There are recent reports, however, of successful tours by Burmese politicians, bent on rousing nationalist feeling among the Shans.

Stevenson states⁶ that: "Like the Burmans . . . the Shans are a happy, pleasure-loving people, hospitable and friendly. They are great hunters and gamblers." They are of about the same build as the Burmans and Thai, and a little fairer in complexion than either. Many Shan women are very attractive. In addition to rice, their crops include oranges, potatoes, tobacco, coffee, tea, vegetables, and in recent years, tung trees. They live in the valleys on the level parts of the plateau, leaving the less malarious but also less productive hill-sides to a medley of untutored hill tribes.

⁶ H. N. C. Stevenson, *The Hill Peoples of Burma* (Longmans, Green & Co., 1944).

Chins.—Inhabiting the western hills of Burma as far north as the Somra Tract, and as far south as Sandoway and Thayetmyo, the Chins are divided into a great many tribes and speakers of different dialects. They use the destructive *taungya* type of shifting hillside cultivation described in chapter viii. Indirect rule, through native chiefs, has also been British practice in this area, and with equally satisfactory results from the standpoint of loyalty. In addition, the Chins have furnished many recruits for the armed forces, in peace and in war. They are reputed to have low moral standards and also low standards of cleanliness, the urge to bathe being inhibited by the cold mountain air as well as by the distance to the nearest source of water. Stevenson describes their clothing as follows:

The dress of the men can be said to dwindle from little in the north to still less in the south, and the sex exhibits a magnificent resistance to the wide climatic variations to which it is exposed.⁷

Mons.—The Mons or Talaings once ruled all Lower Burma, and for many generations disputed the overlordship of the whole of Burma. They were finally defeated in the wars of Pegu and Ava in 1752-56, and much of the race was "liquidated." The remainder fled to Siam, or to an area south of Moulmein, or lived among the Burmans, at first in a subordinate role. Now, however, they are often difficult to distinguish from the Burmans. They are also Buddhists, and have a fairly high standard of literacy and a rather ancient literature. Many prominent Burmans have some Mon blood. Little appears to remain of the old antagonism between the two races.

Palaungs and Was.—The northeastern part of the Shan Plateau, east of the Salween, is very hilly, and is inhabited chiefly by the Was, who are also found on the opposite side of the Chinese border. They are reputed to have secured from sixty to one hundred human heads per annum, as part of their fertility rites.⁸ They were undoubtedly the least civilized of

⁷ H. N. C. Stevenson, *The Hill Peoples of Burma*, p. 7. Stevenson did not choose very photogenic specimens for the picture accompanying this description, but it does illustrate his point!

⁸ Stevenson, *op. cit.*, p. 14. This practice was being discouraged, and the proportion of "tame Was" was increasing.

the peoples of Burma, and it was only a few years before the outbreak of the Pacific war that British administration was extended to the Wa states. Very likely the census takers did not do a thorough job in that area, even in 1941, and in 1931 much of it was omitted. Hence the true present figure for Wa population is probably considerably larger than the 1931 Census figure of 176,924 listed in the Census. Moreover, rather extensive Wa immigration from China is believed to have taken place about 1937-40. The Palaungs, closely related to the Was, are located farther to the northwest, chiefly in Tawnpeng. Like most other hill tribes, Was and Palaungs carried on the taungya or hillside type of agriculture.

Kachins.—The Kachins are probably better known to American soldiers than any other race in Burma, since they chiefly inhabit the area in northern Burma in which American troops operated in 1944. There are a few scattered Kachin areas as far south as Kengtung state, but the great majority live north and northwest of Lashio as far as the northern tip of Burma. They are probably much more numerous than the figure of 153,897 of the 1931 Census. The 1941 Census was extended to include more of the Kachin area, but even then much of the 28,000 square miles excluded from the census was inhabited by Kachins. Therefore Stevenson's estimate of 400,000 for Kachin population in 1944 is very reasonable. Kachin tradition (written language came with American missionaries, around 1880) says that the tribes came from eastern Tibet about A.D. 700, or fifty or sixty generations ago. A highly successful fighting race, they forced the Chins, Palaungs, and Shans farther south. The Hukawng Valley gets its name from the innumerable mounds in it where the corpses of the Shans slain by the Kachins were cremated; *ju-kawng* in the Jinghpaw (Kachin) dialect means "cremation mounds."⁹ When the British came the Burmans themselves were saved from further slaughter at the hands of the fierce Kachins. Like most of the other hill people, the Kachins cultivate rice and other cereals with small hoes on hillsides too steep for the use of draft

⁹ *Ibid.*, p. 9.

animals. Little money enters into their economic life, and the village economy includes much mutual help and a system of mutual obligations.

Indian immigrants.—Most Indian immigrants came from Madras, Bengal, and Orissa, to work as laborers on the land, in the mines or mills, or on the railways. The typical immigrant left his family behind, sometimes taking a temporary wife in Burma. Indian immigration was encouraged by the government, while Lower Burma was first being opened up, but such aided immigration was soon found unnecessary—the wage differential between India and Burma provided adequate incentive without special governmental activity.

The Indian population was concentrated in Rangoon, where it comprised 45 percent of the 1941 total and in towns along the railways and the chief inland steamer routes, except that some of the farm laborers might be found a bit farther afield. Rangoon was for a time reputedly the first port for immigration in the world, with as many as 450,000 immigrants and 360,000 emigrants in one year. The average for the period 1930-40 was 202,000 immigrants and 209,000 emigrants per annum.

The depression of the 1930's plus the gradual increase in Burmese population resulted in attempts of the Burmans to secure laborers' jobs previously monopolized by Indians. The race riots of May-June 1930 resulted from disputes over the right to work as dock coolies—a type of work previously done only by Indians.

In 1941 the *Rangoon Times* (May 9) published a fragment of the Census which will probably never be complete. The total population of Rangoon was given as 501,219, of which Indians numbered 226,596, males comprising 183,285 against only 43,311 females. Hindus predominated, accounting for 123,947 males and 34,024 females. Thus the proportion of Indians in Rangoon fell from around 60 percent in 1921 to 53 percent in 1931 and 45 percent in 1941, although the total number of Indians increased.

The question of immigration was raised again and again in spite of statistics which showed a net emigration of Indians.

Just before the outbreak of war in 1941 an Immigration Agreement was tentatively agreed upon, but the war came before it became effective. Immigration is again a difficult and delicate issue between India and Burma, and a Burmese law of June 1947 setting up machinery for the restriction of immigration caused Indian protests, official and editorial.

At the end of 1943 the government of India took a census of Asiatic British subjects who came to India from Burma, Malaya, Indonesia, etc., since December 8, 1941. Undoubtedly the greater portion of the immigrants came from Burma. Officials of the Government of Burma estimated that nearly 500,000 Indians and others left Burma at the time of the Japanese invasion, but the actual census revealed only 393,753. However, it is believed that many illiterates and others failed to register. Also, the Burma government estimated that at least 10,000 lost their lives in the trek.¹⁰ Of the total number who were enumerated, 300,285 were men and 93,440 were women. Indians comprised almost 90 percent of the total — 352,235 in all. A government dole was paid to such bona fide Burma evacuees as were found to be in dire need, with the expectation that they would be repatriated as soon as feasible.

Chinese Immigrants.—The Chinese, referred to by Burmans as *Pauk paw* or next of kin,¹¹ have ordinarily been better received than have the Indians. The fact that they have entered Burma in much smaller numbers no doubt helps to make them less unpopular. In 1931 they numbered but 193,594, or less than one-fifth as many as the Indians. Moreover, nearly a third of the Chinese lived in the Shan and Wa states, along the China border, where they were hardly considered foreigners. Males outnumbered females by a two to one ratio, against a three to one ratio for Indian Hindus.

Settling in Rangoon and Moulmein in particular, but having individual households and shops in many remote villages and all towns, the Chinese comprised about 10 percent of those en-

¹⁰ *Burma Today*, January 1945, published by the Director of Public Relations, Government of Burma, Simla.

¹¹ John L. Christian, *Modern Burma*.

gaged in trade. They were very prominent in tin and wolfram mining in Tenasserim, comprising 23.6 percent of the miners of the country and 10.4 percent of those engaged in the working of metals. They ran many small hotels and cafes, and comprised 10 percent of workers in such establishments, besides providing 35.2 percent of the dentists, according to the 1931 Census.

The *Rangoon Times* item cited above gives the Rangoon Chinese population in 1941 as 36,556, of which total 22,759 consisted of males and 13,797 of females. The 1931 Chinese population of Rangoon was 30,624. Had the census been taken three years earlier, before the opening of the Burma Road brought numerous Chinese businessmen and others to Rangoon, there would probably have been shown little increase over the earlier figure.

Europeans, Japanese, and Anglo-Burmans. Europeans were concentrated chiefly in Rangoon and the various district headquarters, and engaged in business and government, with a few in professional and missionary work. Japanese numbered but 438 males and 169 females in 1931, but there is no census breakdown to give their occupations, although common observation suggests that most of them were photographers, dentists, or specialists in massage. The importance of the humble photograph shop to national defense (and offense) became suddenly obvious in 1941. The 1931 Census has a heading "Anglo-Indians" but nationalism caused this to be changed to "Anglo-Burmans" by 1941. They were engaged particularly in railway transport, the telegraph service, the police, and other forms of public and semi-public service.

EDUCATION AND LITERACY

The Buddhist monastic school helped to give Burma a rate of literacy considerably above that of other Far Eastern countries except Siam, where the same system prevailed. In 1931, 56 percent of the males over the age of 5 and 16.5 percent of the females were literate—rates approximately four times as high as those reported for India at the same time. If Burmans

alone are considered, the literacy rate is 71.7 percent for males and 21 percent for females. The animistic tribes of the hills bring down the average for the country, only 1.9 percent of the people of the Chin Hills (over 5) being literate for instance, against 50.8 percent in Rangoon and 30 percent in near by Pegu District.

Unfortunately, the monastic school did not impart very much knowledge of a secular nature, and the barest rudiments of arithmetic, plus the ability to read and write painfully and slowly, were all which most boys (and the few girls) received, aside from religious instruction. Some, however, persevered in their studies until they began to learn English, and 2 percent of the males and 0.5 percent of the females of the country as a whole were literate in English. These were concentrated chiefly in the large towns, but thousands of villages have one or two persons each with a smattering of English. Several parts of India, however, have a greater proficiency in English. Very likely the 1941 Census would have shown literacy rates considerably higher than the 1931 Census, for education was making rapid strides in the decade.

In addition to the monasteries, there were thousands of village one- or two-teacher schools, most of them supported by the District Councils, and inspected rather regularly. Such schools were part of the "vernacular" system, giving instruction only in the pupil's mother tongue. The towns ordinarily had one or more "Anglo-Vernacular" schools in which instruction shifted to English after about the fourth standard, and was almost entirely in English by the time high school was reached. A few centers, particularly Rangoon, had English schools, where the medium of instruction was English throughout, although Burmese was taught as a second language. The University of Rangoon, with colleges of Arts and Science, Medicine, Education, and Agriculture, besides departments of Engineering and Law, had about three thousand students. Relatively few of these students specialized in medicine and engineering, and many took law or the ordinary arts degree, to graduate into unemployment, frustration, and political activity

The scholastic standard of the university was held rather high.

Vocational education was not very well developed, although steps were under way since the report of the Committee on Vernacular and Vocational Education in 1937 to create a better balanced educational system by setting up trade schools. However, almost no graduates of the Agricultural College took up farming, except as they served with the Department of Agriculture, so the educational authorities were faced with the problem of creating a demand for vocational education! The small Cottage Industries Department had a lacquer school at Pagan, and the Saunders Weaving Institute at Amarapura, near Mandalay, had traveling weaving instructors who appear to have been moderately useful. A State Polytechnic School and a State School of Fine Arts in Rangoon were organized just before the Japanese invasion. A well equipped Government Technical School at Insein admitted high-school graduates, and furnished qualified technicians to the mining, petroleum, and other companies. Forestry, survey, and public health schools existed almost entirely to provide recruits for the government departments concerned.

The inflation of 1945-46 made life very hard for salary earners such as teachers. Lack of buildings also contributed to the shortage of functioning schools. The situation in September 1946 was described as follows by the *New Times of Burma*:

During the period ending August 31 there were 2,819 State Schools with an approximate attendance of 21,807 pupils, 74 recognised private schools, with an approximate attendance of 11,281 pupils and 1,132 unrecognised private schools with an approximate attendance of 64,500 pupils, says a progress report

The recent sanction for the increase in the number of State Schools and teachers has allayed the anxieties of teachers to some extent.

Many mission and other schools which had previously been government-aided, though managed by private agencies, were applying for state support. The lack of any government aid for nonstate schools naturally facilitated the transition to a system in which state schools predominated.

The University of Rangoon opened with a reduced staff in August 1946, but strikes in January-March 1947 seriously impeded academic work. About one hundred graduate students are being sent annually to British and American universities as state scholars. The first large group to enter American universities arrived in February 1947. It is expected that the secondary-school system will be changed drastically, the vernacular, Anglo-vernacular, and English schools being amalgamated. The implementation of these plans is, however, greatly impeded by domestic unrest and an unprecedented crime wave.

OCCUPATIONS AND SKILLS

Although the great majority of the people of Burma followed agriculture as an occupation, the Burman has long shown great skill in handicrafts, and more recently in mechanics. He shows promise of adapting himself to modern industry as fast as conditions make the introduction of such industry feasible. The 1931 Census gives the following occupational breakdown:

TABLE 9
DISTRIBUTION OF OCCUPATIONS IN BURMA

Occupation	Percentage of Workers
Agriculture	66.5 percent
Industry	10.7 percent
Trade	9.0 percent
Transport	3.6 percent
Professional and liberal arts	3.2 percent
Animal husbandry	2.3 percent
Forestry	0.8 percent
Public administration	0.7 percent
Domestic service	0.7 percent
Exploitation of minerals	0.6 percent
Police, etc.	0.5 percent
<i>Rentiers</i>	0.1 percent
Unproductive and insufficiently described.....	1.3 percent
	100 percent

The figures for "industry" include a great many who actually belong to farm families but spend part of their time weaving or in other handicrafts. Hence agriculture is even more important than is indicated by the foregoing table. The economic importance of forestry and mining, on the other hand,

is probably greater than the figures would indicate, for these industries produce materials which provide a disproportionate amount of business for the transport industries. Moreover, the miners are usually single men whose families live outside Burma and are thus excluded from the census, whereas in agriculture, for instance, wives and minor children are frequently counted as workers.

Comparison between the indigenous races and the two chief immigrant races reveals that whereas 71.9 percent of the former were agriculturists or were engaged in forestry, only 20.7 percent of the Indians and 6.4 percent of the Chinese were so engaged.

The census of occupations sheds light on an interesting point regarding agricultural relationships. It is chiefly since the great depression that public interest has been focused on the loss of their lands by the farmers, but comparison of the 1921 and 1931 Censuses reveals that there was a very considerable drift of cultivating owners into the classes of tenants and agricultural laborers, the figures for male agricultural workers in Burma being as follows:

Class	1921	1931
Cultivating owner	50.6%	36.9%
Tenant cultivator	22.3%	23.0%
Agricultural laborer	27.1%	40.1%

It will be seen that cultivating owners declined from over half to a little over a third of the total, while landless laborers increased from 27 to 40 percent. There is evidence that the trend continued until about 1936, when the situation was about stabilized. As will be indicated below, the Japanese-sponsored government in 1944 announced a program for reversing this trend, and some British sources have mapped out a postwar program for the same purpose.

The envy of the Burman for the immigrant was based partially upon the fact that Indians and Chinese had the positions in commerce and industry which produced the most wealth. In fact, 77.2 percent of the Chinese and 55.7 percent of the Indians were engaged in commerce, industry, and transport (some

of them, albeit, in humble posts where they were little or no better off than farmers) against only 19.3 percent of the Burmans and other indigenous races. The fact that India was occupied by the British much ahead of Burma accounts partially for the greater adaptability of the Indian immigrant to modern life, at least up to recent times. J. S. Furnivall¹² suggests that the Burman has held his own in the sphere of the gas engine, which was introduced after he had begun to become acquainted with modern life. Many Burmans are satisfactory mechanics and motor drivers.

The census figures for handicraft workers probably tend greatly to exaggerate the importance of handicrafts, for they seldom referred to full-time workers who chose this means of making a living and followed it to the exclusion of all others. Ordinarily the figures referred to part-time workers who supplemented their meager agricultural earnings by carrying on village crafts, particularly during the period following planting and that following the harvest of rice. Census figures would suggest that most "industry" is carried on in rural areas, whereas most factories were in Rangoon and the other large centers. The Japanese occupation, with the almost complete stoppage of imports, gave craftsmen an opportunity to supply the entire domestic market without competition. For various reasons the craftsmen did not make up for a very large share of the drop in imports, and mid-1947 finds Burma still woefully short of consumption goods of all kinds, in spite of increasing imports by the Civil Supplies Department.

¹² J. S. Furnivall, *Political Economy of Burma and Reconstruction in Burma*.

IV

AGRICULTURE

Few descriptions of Burma fail to mention the fact that in normal times agriculture employs the great majority of the people, or that Burma is the world's greatest rice exporter. The Irawaddy Delta and the lower valleys of the Sittang and Salween, together with parts of the Arakan and Tenasserim coasts, constitute in peacetime an area with over ten million acres of rice, and very little of any other crop. This fact of rice monoculture gives a rather distinctive character to Burmese economy. It led to the complete transformation of the social and economic life of the Burmese village, as described in chapter ii.

In central Burma, however, climatic and soil conditions are unfavorable to the cultivation of large areas of rice, and a diversified agriculture is practiced.

In the whole of Burma, on the other hand, small-scale cultivation is the rule, the typical area worked by a single peasant or tenant being ten to twenty acres, or about enough to employ one man and one team of cattle. Even where, as in Lower Burma, there are many estates of one hundred to one thousand acres each, the estates are broken up into many small units before being let to tenants.

CHIEF CROPS

Rice.—Approximately two-thirds of Burma's total acreage was planted to rice, or 12,518,000 acres out of a 1940-41 country-wide total of 18,814,798 acres. The figures changed little from year to year, as there was no practicable alternative to rice for most of the soil, and the monsoon is so reliable that

only relatively unimportant marginal areas are in danger of crop failure through lack of water.

The existence of a large Dry Zone, however, while other crops are invariably grown in the absence of irrigation, prevents rice from furnishing as large a proportion of total acreage as in Siam or French Indo-China. Figures for percentage of rice culture and production as compiled by Wickizer and Bennett¹ are as follows:

	Percent	Thousand Metric Tons
Siam	95*	2,711†
French Indo-China	86	3,945‡
Burma	65	4,940†
Java	45	4,007‡
Malaya	7.5§	341§

* Not included by Wickizer and Bennett. Based on *Statistical Year-book of Thailand, 1938-39*.

† Average, 1935-36 to 1939-40.

‡ Includes Madura

§ Based on *Malayan Agricultural Statistics, 1940*, whose figures differ from those of Wickizer and Bennett.

The general nature of the growth of Burma's rice acreage was described in chapter ii. The available figures as to acreage since 1830 are given in the following table:

GROWTH OF ACREAGE UNDER RICE*

Year	Lower Burma	Upper Burma	Total
1830.....	66,000		66,000
1835.....	235,000		235,000
1845.....	354,000	No	354,000
1855.....	993,000	records	993,000
1860.....	1,333,000	before	1,333,000
1865.....	1,437,000	1886	1,437,000
1870.....	1,735,000		1,735,000
1875.....	2,379,000		2,379,000
1880.....	3,102,000		3,102,000
1885.....	3,700,000		3,700,000
1890.....	4,398,000	1,357,000	5,755,000
1895.....	5,007,000	1,500,000	6,507,000
1900.....	6,578,000	1,972,000	8,550,000
1905.....	7,222,000	2,057,000	9,279,000
1910.....	7,808,000	2,142,000	9,950,000
1915.....	8,285,000	2,119,000	10,404,000
1920.....	8,588,000	1,751,000	10,339,000
1925.....	9,318,000	2,240,000	11,558,000
1930.....	9,911,000	2,459,000	12,370,000
1935.....	9,702,371	2,307,346	12,009,717

* Abstracted from *Burma Handbook, (1943)*, p. 23. Slight corrections in 1905 and 1920 figures. The 1935 figures seem completely wrong, as given by the *Burma Handbook*, so they have been compiled from the official *Season and Crop Report, 1934-35*.

¹ *Rice Economy of Monsoon Asia*, (Stanford University Press, 1941), p. 31.

The figure of 18,814,798 acres cited above as total area planted to crops in 1940-41 includes 1,254,046 acres of land sown more than once (practically none of it was sown more than twice). Rice was often one of the two crops, but little if any land was planted twice to rice in the same year.

Some serious students of Burmese rural economy doubt if there are large areas which can be brought under cultivation without heavy expenditure. However, the *Season and Crop Report, 1940-41*, lists 19,031,102 acres of "culturable waste"—much of it in the Irrawaddy Delta, where rice would be the crop grown if the necessary work were done to protect the land from floods and to clear off the dense jungle. Since Lower Burma has had such a relatively sparse population in modern times it is to be expected that considerable areas of cultivable land would not yet be taken up. It is doubtful, in fact, if there is any comparable area in Asia with as much potentially excellent rice land not yet under cultivation.

Rice is grown in extensive irrigated areas in the Dry Zone, and in the Upper Burma Wet Zone. However, all areas aside from the Irrawaddy Delta, the lower valleys of the chief rivers, and Arakan and Tenasserim are either barely self-sufficient in rice in normal times or have to import rice from other parts of the country. This fact explains reports in 1943 and 1944 of drastic food shortages in certain areas while rice was a drug on the market in Lower Burma. Even as late as the fall of 1946 there were reports of somewhat similar conditions, for rather large areas are deficient in rice—the one staple food of the people of Burma.

Burma's rice production slumped drastically during the Japanese occupation, as might have been expected when exports, which had previously accounted for over half the crop, were almost entirely stopped. Perhaps the low ebb was reached as the Allied armies returned, and the 1945-46 crop was officially estimated as amounting to only 2,701,000 long tons of paddy, against a normal crop of over 7,000,000 tons. Even at that there was sufficient carry-over of rice from previous seasons to permit the export of nearly half a million tons during the

1946 calendar year—over half of the exports consisting of stocks so old that Burmans were unwilling to eat them, and an export market might not have been available but for near famine conditions in India and other markets. The goal for 1946-47 was 8,500,000 acres producing five million tons of paddy or a little over three million tons of cleaned rice. The goal was not reached, due largely to civil disorders, and the final forecast stated that 7,760,500 acres matured, the crop being estimated at 3,980,000 long tons of paddy. Hence "crop available for export" was approximately 1,284,000 tons of paddy or 950,000 tons of rice and rice products.²

Given reasonable conditions of law and order, there seems every likelihood that Burma's rice production will be restored to its prewar normal in a very few years. In fact, Burma's rather large population increase would suggest the likelihood of bringing under rice cultivation considerable areas in Lower Burma hitherto uncultivated. Burma's export market for rice seems well assured, for India, the chief customer, is increasing in population in spite of occasional famines and disturbances. Moreover, if India carries out its vast industrialization program, food imports of that country may be expected to increase. In August 1947 a high Burmese official estimated the 1947-48 rice export as 1,500,000 tons. Disastrous floods almost immediately caused revision of the estimate to 1,200,000 tons. All in all, the long-term outlook for Burma's rice exports seems at this time excellent.

Sesamum.—In marked contrast to rice, *Sesamum* is grown on some of Burma's driest land, where rainfall is irregular and output subject to considerable variations. In 1936 production was 51,000 tons, but the following year it fell to 40,000 tons and then returned to 51,000 tons in 1938. The 1941 figure was 57,000 tons from 1,353,000 acres. According to an estimate of a former Commissioner of Settlements and Land Records,³ normal production of sesame oil, as distinct from seed, amounted

² *India and Burma News Summary*, April 24, 1947, p. 13.

³ Mr. B. O. Binns, quoted in the appendix to *Basic Problems of Relief, Rehabilitation and Reconstruction in Southeast Asia* (Oxford University Press, Bombay, 1945).

to approximately 21,000 long tons. Sesame is grown in two more or less clearly defined seasons, and is divided into the "early" and "late" varieties. The former is much the more important.

Oilseeds are vital to the Burmese diet, normal per capita consumption being 10.3 pounds of oil for food. In spite of a normal production of 62,000 long tons of peanut, sesame, and other vegetable oils, it was still necessary to import about 7,000 tons annually. In 1946 shortage of sufficient vegetable oils caused great inconvenience, for this commodity ranks next to rice in importance in the local diet. The final forecast of the 1946-47 crop of *early* sesame was 793,160 acres, against a 1936-41 average of 1,072,300 acres. Both early and late sesame crops were estimated to produce 31,000 long tons of seed.⁴

Groundnut.—Whereas sesame cultivation is well distributed throughout the Dry Zone, groundnut cultivation is concentrated mostly in Pakokku District, west of the Irrawaddy, and in Myingyan and Magwe districts, on the east bank, since these are the districts with the sandiest soil. Cultivation has increased greatly in the past few decades, particularly with the introduction of improved Spanish varieties, and widespread adoption of improved techniques of cultivation as taught by the Department of Agriculture. Further expansion may prove possible, utilizing marginal lands in the Dry Zone hitherto not used for any crop. The 781,000 acres of groundnuts planted in 1940-41 produced 195,000 long tons of nuts in the shell.

Groundnut oil was slightly more expensive than sesame oil, their prewar Rangoon prices being Rs. 78 and Rs. 72 respectively, per 100 *ziss* (364 pounds). Prewar production of groundnut oil was estimated by Mr. Binns as 57,000 long tons annually, imports sometimes running as high as 15,000 tons. The oil was used normally for cooking. The cake remaining after extraction of the oil was often exported for fertilizer. The official estimate of 1946 groundnut acreage was 552,700, against a 1936-41 average of 808,000 acres.⁵

⁴ *India and Burma News Summary*, pp. 13-14.

⁵ *Ibid.*

Beans.—There has been a considerable increase in the planting of the various kinds of beans in recent years. The acreage in 1941 was over a million. Binns estimates normal production of all "pulses" as 244,000 tons, of which 102,000 tons were exported. Production is scattered throughout the Dry Zone, the northern portions thereof contributing the largest share.

The Japan Cotton Company was reportedly buying all types of beans in the northern Dry Zone in the summer of 1944, at prices fixed by the Japanese army and the subservient Burma Government of the time. The owners were forbidden to hoard or to sell in the black market, under severe penalty.

Millet.—Millet has long been an alternative food for Dry Zone people unable to secure or afford rice. It has been very useful on occasion of food shortage. Burmans ordinarily prefer rice, however. Millet is grown on poor soil, and there has been a tendency for its production to decline in favor of beans and groundnut. Normal production was 74,000 long tons, while imports and exports were negligible.

Cotton.—Like millet, cotton is normally grown on very poor soil. The staple of the cotton is low, the chief variety, *wagale* or "small cotton," having a staple of only half an inch, or sometimes even less, while *wagyi* or "big cotton"⁶ has a staple of about three-fourths of an inch. The gross value of cotton in Sagaing District during 1940-41, worked out from the *Season and Crop Report* for that year, comes to only \$1.04 per acre (United States equivalent of the rupee return) against \$2.18 for sesame, \$4.32 for millet, \$4.05 for groundnut, \$4.58 for beans, and \$5.12 for rice. It should be noted, of course, that the comparison with rice is not altogether fair, most rice being grown at greater cost on irrigated land.

Prewar cotton acreage varied from 300,000 to 550,000 acres. Sagaing, Myingyan, Meiktila, Lower Chindwin, and Thayetmyo districts were the chief producers. Normal prewar production was 18,000 to 20,000 long tons of lint. The Department of Agriculture was somewhat successful in intro-

⁶ The names probably refer to the size of the plant, rather than length of staple.

ducing improved varieties of cotton, but less so than in the case of groundnuts or sugar cane.

The Japanese made strenuous efforts to increase Burmese cotton production, but without success. There were no local textile factories in operation, and hand spinning and weaving were inadequate to process all available cotton, even without a great increase in output. Japanese shipping difficulties prevented extensive exports. Even in 1945, immediately after return of the British, prices of cotton appear to have been unsatisfactory, for the first official cotton forecast for 1946-47 attributes the decline in acreage planted chiefly to the unsatisfactory prices received by growers for the previous year's crop. The 1946-47 final forecast was 174,500 acres, against a 1936-41 average of 452,700 acres.⁷

There is no apparent reason why Burma could not produce cotton of much better quality. The production of very high-quality, long-staple cotton in dry climates such as Egypt and California suggests that the possibility of scientific agriculture, including intensive fertilization and suitable irrigation, may enable Burma to compete in the high-quality cotton market.

Sugar cane.—Sugar-cane acreage hit an all-time high in 1940-41 with 76,875 acres planted to the crop. Sugar cane is a crop with intensive and expensive cultivation, and normal yield before the war was around 20-30 long tons per acre.⁸ The gross value of the crop was of course much greater than the acreage would indicate, the farmer receiving about Rs. 8 per ton at mill or railway,⁹ making his *gross* return Rs. 160 to Rs. 240 (about \$50 to \$70) per acre—very remarkable figures when compared to the gross and net returns of Dry Zone crops cited in an earlier section of this chapter. It should be remem-

⁷ *Burma Gazette*, May 17, 1947. The 1943-44 acreage was 279,399, producing only 4,400 tons. *Season and Crop Report, 1943-44*, published in 1946.

⁸ The Government Experimental Farm at Pymmana and the Pymmana Agricultural School reported yields as high as 70 long tons per acre by the use of optimum amounts of fertilizer and the best-known methods. Normal peasant outturn before the introduction of Java cane was only 10 to 15 tons per acre.

⁹ During January 1947 the Government set the price to be paid growers at the Zeyawaddi factory at Rs. 60-65 per ton. *Survey of Departmental Activities for the Month of January, 1947*, p. 1.

bered, of course, that the cost of producing sugar cane was many times greater than production costs for other crops, particularly if artificial fertilizers were used to boost production to 30 tons or more per acre.

High sugar-cane yields were made possible by the general adoption of P.O.J. 2878 and other canes developed by the Java Experimental Stations. Much use was also made of a cane further improved at the Coimbatore Station in India. The cane sometimes reaches a height of 20 feet, and grows so thickly on properly fertilized land that a man can scarcely push his way through it. One or two "ratoon" crops are ordinarily grown on the same roots in successive years, after which it is necessary to rest the land by planting a less exhausting crop, unless considerable quantities of fertilizers are used.

Burma had become almost self-sufficient in sugar production by 1941, the two working mills producing 38,252 long tons that year. Consumption in the previous decade had averaged 34,000 tons, but was probably increasing with the steady population growth. According to Binns¹⁰ other cane products, chiefly *kyantaga*¹¹ amounted to a normal 47,000 tons¹² while palm sugar, manufactured throughout the Dry Zone from juice extracted from palm trees, amounted to about 50,000 tons. Had milling capacity been greater, it is likely that more white sugar and less *kyantaga* would have been produced, but the great rewards of sugar-cane production caused a flooding of the market, and cane which could not be sold to either of the refineries was ordinarily converted into *kyantaga* as a last resort.

In 1945-46 only the Zeyawaddy refinery was operating, and the Agricultural Projects Board estimated output of white sugar at only 2,049 tons. Cane *jaggery* or *kyantaga* production fell to about 16,000 tons, while palm-sugar production dropped slightly to about 45,000 tons. It appears that production of

¹⁰ Binns, *op. cit.*

¹¹ Somewhat similar to brown sugar, but incapable of being stored as well as brown sugar. It is made by country methods of refining the juice extracted by a press powered by oxen.

¹² Mr. R. Watson, Director of Agriculture, has read the foregoing and suggests that 20,000 long tons is a better estimate of cane *jaggery* or *kyantaga* production. Another recent official estimate is 27,000 long tons.

sugar cane was around one-third of the prewar normal, having suffered about the same proportionate drop as rice so far as output is concerned, although acreage in 1945-46 was estimated at 31,905 by the Commissioner of Settlements and Land Records. The government plans to import about 30,000 tons of sugar in 1947.

Fruits and vegetables.—The statistics compiled by Mr. Binns show Burma to be approximately self sufficient as to fruits and vegetables. Only 1 percent of fresh vegetables (4,000 tons out of 404,000 tons) was imported, and but 19,000 of an annual consumption of 89,000 tons of onions. As to fresh fruit, production was 417,000 tons (according to an estimate which cannot aspire to finality)—exports 2,000 tons, and imports 3,000 tons.

Public health and agricultural workers have long attempted to enrich the Burmese diet by encouraging the production and use of greater quantities of vegetables and fruits. The more well-to-do families enjoy a rather varied diet, but the poorer the family the less the consumption of vegetables and other curried items along with the inevitable rice. On the other hand, despite the need of more varied food crops for the poorer classes, there exist uncultivated areas ordinarily covered with fairly thick jungle growth within a few miles of most Burmese villages, and impecunious villagers often gather herbs, roots, bamboo shoots, and innumerable miscellaneous items with which to eke out their diet.

Fruit is more evident in Burmese villages than vegetables, in spite of Mr. Binns's statistics which seem to indicate that vegetables (including onions) are produced in slightly greater quantity. Plantains (bananas) grow wild in most parts of the country, and flourish in innumerable back yards without benefit of culture, except planting and gathering of the fruit. Commercial cultivation exists on a rather limited scale, a few varieties being approximately equal to Central American bananas. The indigenous pineapple is inferior to that of Malaya, and much inferior to the Hawaiian variety, but the Department of Agriculture has made some headway with its cam-

paign to substitute the Kew Spineless, a leafed variety from Ceylon and Singapore, for the inferior indigenous type. The yield in southern Toungoo District was estimated as 30,000 pounds of fruit the first year and about half that much for the "rattoon" or second crop from the same roots. The Deputy Director of Agriculture, Tenasserim Circle, estimated that a considerable proportion of the 143,000 acres described as planted to "fruit gardens" in his Circle consisted of pineapples.

Other crops.—The other chief crops, and area (in acres) devoted to each in 1940-41 are as follows:

Crop	Area	Crop	Area
Maize	213,966	Indigo and other dyes .	416
Gram	275,252	Tea	2,927
Miscellaneous cereals..	163,731	Tobacco	133,587
Rape and mustard....	5,522	Betel vines	5,181
Coconut	9,344	Betel nuts, coffee, etc. .	28,391
Miscellaneous oilseeds.	2,288	Fodder crops	190,273
Chillies	123,313	Vegetables	96,895†
Miscellaneous spices .	18,125	Plantains	60,214†
Palm groves	61,566*	Onions	27,424
Jute and miscellaneous fibers	1,819	Fruit gardens	376,550†

* In addition to an unknown, but probably large, number of isolated but productive palms.

† Probably fails to include numerous small household gardens.

Rubber.—Burma appears to be situated rather too far north for rubber production on a large scale, and also lacks the cheap labor without which the industry has not hitherto flourished anywhere. Most of Burma's production is in Tenasserim (area 4 on the map) being more or less a continuation of the Malayan and Thai rubber zones. However, there are a few estates on the laterite soils of the southern Pegu Yomas (area 8 on the map facing p. 3).

Burma, like Indo-China and Siam, was allotted more production and export by the International Rubber Restriction Agreement than was actually produced. In other words, all three countries received prices which were above the true competitive rate because of restriction in Malaya and the Netherlands East Indies, whereas none of them curtailed production in order to enhance the world price! Burma's quota was 13,750

tons, but production ordinarily did not reach 13,000 tons. The *India Rubber World*, June 1, 1941, listed Burmese rubber production as 14,000 tons.

Burmans owned most of the 3,693 estates with an area under 100 acres, but Steel Brothers and other large European companies owned most of the large estates. In 1938 the value of rubber land was estimated at \$175 (United States currency) per acre. Four-fifths of the estate labor in 1931 was Indian, and there does not appear to have been any significant change in the succeeding decade.

According to the *India Rubber World*, Burmese production was 14,000 long tons from 110,000 acres, or 0.13 tons per acre,¹² against 0.22 for Indo-China, 0.21 for Indonesia, and 0.19 for Sarawak. Only Siam had as low a rubber production per acre. Regarding the situation in early 1947: "It is estimated that probably 25 percent of planted rubber acreage in Burma has been destroyed . . . In the circumstances the production of finished rubber is probably not much more than half the pre-war volume."¹³

LIVESTOCK

Unlike the more densely populated areas of China, Indo-China, and India, where hand labor predominates, Burma normally relies chiefly upon the power of cattle and water buffaloes for draft purposes. A single team of oxen is normally able to plow and harrow ten to fifteen acres of rice. While they are used most in the wet rice-growing areas, the death rate appears to exceed the birth rate of cattle there, for the Dry Zone and the Shan States are constantly called upon to supply great numbers of draft cattle for Lower Burma. Thus, of the 2,850,838 bulls and bullocks in divisional Burma (i.e., excluding the Shan States, the Kachin and Chin Hills, etc.) only

¹² In *Notes on Agriculture in Burma*, published by the Government of Burma at Simla, in 1943, "fair average yield" was given as 350 pounds of rubber per acre, or 0.16 ton.

¹³ Sir Arthur Bruce, president of the Burma Chamber of Commerce, and former economic adviser to the Governor of Burma, quoted in the *New Times of Burma*, March 14, 1947.

1,228,000 were in the Dry Zone, and only 43,500 of the 361,627 buffaloes were in the Dry Zone, where mud puddles and water for their lengthy siestas were scarce.

The *Season and Crop Reports* of 1937-38 and 1940-41 give statistics (see Table 10) of livestock, plows, and carts:

TABLE 10

NUMBER OF LIVESTOCK, PLOWS, AND CARTS IN DIVISIONAL BURMA

Oxen	1937-38	1940-41
Bulls	686,478	723,398
Bullocks	2,095,834	2,127,440
Cows	1,429,797	1,438,721
Calves	950,408	956,447
Buffaloes		
Bulls and bullocks	354,696	361,627
Cows	396,699	418,005
Calves	266,410	270,136
Goats	291,916	297,275
Sheep	77,128	78,029
Horses and Ponies		
Geldings	20,169	17,193
Stallions	2,044	2,048
Mares	23,105	19,433
Colts and fillies	6,475	6,333
Mules and Donkeys		
Mules	1,249	1,531
Donkeys	27	124
Elephants*		
Tame .....	.....†	6,000
Wild .....	.....†	5,000
Pigs	519,789	570,396
Plows	913,809	971,342
Carts	759,226	785,473

* Figures are a rough estimate, from a source believed to be reliable.

† Figures not available.

By 1932 about 60 tractors had been imported, but with almost complete failure so far as agricultural work was concerned. The rice lands become swamps during the rains and tractors tended to bog down. Gasoline and other types of fuel were very expensive, as were spare parts, if and when obtainable, while mechanical skill was much less plentiful than in the West. However, the advances made in tractor designs since 1932, when almost the last of the tractors was imported, make it possible that the reintroduction of tractors may not be as dismal a failure as the first trials.

Scientific stockbreeding is very difficult in a country like Burma, where fences are the exception, and where, after the harvest, herds of cattle roam over large areas, inter-breeding, and sharing diseases.

Cattle were almost never raised for food, although the eating of beef was rather common. Strict Buddhists are vegetarians, but few are so strict as to refuse fish and eggs, and many eat poultry, while beef and pork find a ready sale. Pigs were ordinarily the property of Chinese or Karens. They ordinarily ran wild about the village, and their habits were filthy beyond description, making the Western observer resolve to eat no pork while in Burma.

There was a prewar Civil Veterinary Department, which carried out large-scale inoculations when rinderpest or other epidemics became threatening. It did a very little cattle and horse breeding, but inoculations constituted its chief mode of activity.

Rinderpest and hemorrhagic septicemia were the most important contagious diseases, accounting for 9,500 deaths among working cattle in 1940-41. The following tabulation gives a rather accurate estimate of mortality among working cattle and horses in 1940-41 (horses are very few). It is believed that about half the total cattle population is covered by the term "working cattle," so total cattle deaths may be in the neighborhood of twice the figures given below:

Cause of Death	Number of Deaths
Contagious diseases	11,236
Debility and old age	38,437
Snakebite	9,082
Accident	6,523
Other causes	30,669
Total	95,967

The Japanese attempted to keep the Veterinary Department functioning at prewar efficiency, but their efforts appear to have been quite unsuccessful, for there were unusually severe epidemics, particularly in the Arakan and the Dry Zone.

In some areas of Northern Burma close to battlefronts,

cattle population declined to a small fraction of normal, but in mid-1946 it was estimated that in most rice-surplus areas cattle population was about 75 percent of prewar normal. It should be noted, however, that rice surplus areas are predominantly in Lower Burma, where relatively little fighting took place. In the Delta, in particular, the numerous streams helped to keep large bodies of Japanese troops from penetrating, with consequent slaughter of cattle for food and requisitioning of cattle for transport purposes.

In the lower Hukawng, a preliminary livestock census soon after reoccupation in 1944 revealed a livestock population of only 54, against 3,721 before the war.

Unless large numbers of tractors are imported, it seems unlikely that Burmese rice production can be restored to normal until the cattle population has increase considerably. India and other countries appear to have no surplus of suitable work cattle, and in any case it would require a tremendous amount of shipping to transport to Burma the one and a half to two million cattle required. During the 1946-47 season, however, cattle did not prove a limiting factor, for rice acreage goals were only two-thirds of normal, and cattle population in the chief rice areas three-fourths of normal.

As a measure to conserve cattle for cultivation, the Government of Burma, in February 1947, prohibited the slaughter of cattle fit for either work or breeding.¹⁴ In view of the prevalence of serious crime in the country, and of the difficulty experienced by police and military in suppressing banditry, it is doubtful if this measure will be well enforced in the near future.

FISHERIES

After rice and salt, it is likely that fish and fish products constitute the most nearly universal portion of the Burmese diet. Most of the consumption was of domestically caught fish, imports being only 10,000 tons per annum. However, no estimate of annual consumption is available, and whereas the 1931 Census indicated that about 75,000 people followed fishing as

¹⁴ *India and Burma News Summary*, February 27, 1947.

their chief occupation, common observation convinces one that many times that number engaged in fishing as a sideline.

During the off seasons between plowing, transplanting, and harvesting, large numbers of farmers drain small ponds or set up fish weirs in the small streams, while a considerable proportion of the child population fish with hook and line or otherwise in the millions of acres of standing water which cover the paddy fields. Commercial fishing, on the other hand, takes place in the rivers and along the seacoasts. The right to build fish weirs in the main waterways was taxable, as was the right to fish in such waterways with nets. The *Land Revenue Administration Report, 1938-39*, gives the return from such taxes as shown in the following tabulation:

FISHING TAXES LEVIED IN 1938-39

(In rupees)*

Net licenses	332,503
Leased fisheries	2,323,532
Fisheries of Irrigation Department	65,256
Fisheries of Railway Department	1,368
Fisheries of Forest Department	11,866
Total	2,734,695

* The rupee was then worth about 2 shillings.

There was little genuine deep-sea fishing, although fishing villages fringed the Arakan and Tenasserim coasts, and small boats ventured a few miles out to sea. All of the thirty seven ordinary districts reported some fishing revenue, but as might be expected, Maubin District, in the heart of the Delta, stood first, followed by Tharawaddy, Henzada, and Pyapon districts. Steamers on the rivers of Maubin District had to thread their way among the licensed fishing weirs.

As might be expected, efficient Japanese techniques were applied to Burmese fisheries under the control of the Suisan Sangyo K.K. As many as five iron-hulled boats of this company were seen at a time at the Rangoon jetties. They were about 100 feet in length and used steel nets for deep-sea fishing. They supplied large quantities of fish to the Japanese army and small quantities to the Rangoon market. In addition, they ap-

pear to have commandeered many of the boats used by Burmese fishermen, although some of these appear to have been used more for transport than for fishing.

IRRIGATION

Since the greater part of Burma's cultivated land has an annual rainfall of 50 to 250 inches, irrigation is of little importance elsewhere than in the Dry Zone of Central Burma (area 6 on the map facing p. 3). Statistics are given in Table 11.

TABLE 11
IRRIGATED LAND IN DIVISIONAL BURMA
(In acres)*

Division	1931-32	1938-39	1940-41
Shwecho	256,476	364,428	365,081
Kyaukse	171,968	156,045	159,231
Yamethin	159,074	158,759	177,471
Minbu	124,878	142,688	145,762
Meiktila	121,801	111,496	128,480
Mandalay	96,817	104,952	105,293
Magwe	60,215	37,245	65,069
Myingyan	23,268	20,648	26,181
Lower Chindwin	22,927	18,341	18,112
Pakokku	17,307	13,697	12,671
Total	1,446,511	1,470,333	1,562,336

* *Annual Reports of the Public Works Department, and Season and Crop Reports.*

Some of the Kyaukse canals date back about 900 years, to the regime of the early Burmese kings, while others have been developed during the past fifty years by the Public Works Department, Irrigation Branch. Privately owned canals, mostly small, irrigated 259,000 acres in 1938-39. Canals are not the only means of irrigation, however, wells and tanks being used for a fair proportion of the land. Tanks are of great importance in Myingyan District. Small private tanks irrigated 84,000 acres in 1938-39. Garden crops and sugar cane occupied 7 percent of the irrigated acreage, rice (paddy) covering the remaining 93 percent. Large areas in Lower Burma are irrigated by hand lifts from lakes, swamps, tidal creeks, etc., when late paddy is grown.

The Japanese appear to have made few efforts to keep the

Irrigation Branch going. The director and many of his assistants were employees of the previous regime, but little maintenance was done, and considerable deterioration took place. Nevertheless, the Shwedo canals, much the most important in the country, are still in surprisingly good condition, considering the neglect which they suffered for nearly four years.

METHODS OF CULTIVATION

Methods of rice cultivation¹⁵ in Burma are almost identical with those employed generally throughout Monsoon Asia. The ground is plowed at the beginning of the monsoon, around late May or June, and nurseries are set out as soon as possible. By August transplanting to the plowed fields takes place, men doing the uprooting and carrying of the plants, while women do the actual planting. The monsoon tapers off in September and ceases in October, and by November the first patches are being harvested—the work done entirely by hand with methods many centuries old. The harvest reaches its height toward the end of December, but continues in some areas into February. It should be noted that throughout most of Burma the rainfall is so dependable that crop failure through lack of water at the right time is uncommon.

There is almost never a second crop on the riceland of the main rice-growing areas, but in the Dry Zone double-cropping is fairly common, sesame, beans, groundnut, cotton, and millet being the chief crops involved. Sometimes two crops are planted at the same time (mixed cultivation). Fallowing at the end of two to five years of cultivation is practiced rather generally in the Dry Zone. The land is often plowed soon after harvest, as in the case of "dry farming" in western Canada and the United States.

Still another type of cultivation takes place on alluvial land along the banks of the Irrawaddy and some other streams, as well as in some of the Delta's saucer-shaped islands, where re-

¹⁵ See pp. 4-8, *Burma Rice* (Longmans, Green & Co., 1944) for a more detailed description of rice cultivation.

ceding floods leave behind a lake which dries up, being followed by concentric rings of cultivation. Tobacco, onions, and other crops are grown along the sides of streams. Furnivall¹⁶ describes the scene from the deck of a river steamer: "tufts of dull green sprouting at carefully spaced intervals from a surface that looks like a desert of barren sand; these are tobacco plants, each of which rests on a 'walking stick' of soil maintaining a connection through three or four feet of sand with the silt below."

Finally, there is the destructive *taungya* or hill-field cultivation, practiced by the more primitive hill tribes on the mountainsides throughout Burma. A section of hillside is selected, the trees and shrubs killed and then burned, the ashes providing a fair fertilizer to enable a crop of rice to be grown for a year or two, after which the destruction is visited upon another piece of hillside. Naturally the practice is frowned upon by agriculturists and foresters, for the following reasons:

After a number of years the process is repeated, except that the soil gets progressively poorer, and also requires less labor to clear. Hence a large area may be included. By the time the cycle has been repeated three or four times, a generation has passed and the tree roots have all been killed, while the fertility of the soil has been almost completely destroyed. For several generations, only grass will grow on such soil, and new hillsides are selected for deforestation.¹⁷

The Burmese plow is by all odds the most important agricultural implement, and it differs but little from plows in use in Asia since the dawn of history. It does not go very deep, has no cutting share or moldboard, and hence does not invert the soil. The Department of Agriculture introduced and pushed the sale of a soil-inverting plow, although during the recent war there appears to have grown up a school of thought which prefers the old type of plow as more efficient under the circumstances.

¹⁶ Furnivall, *Political Economy of Burma* (1938), p. 31.

¹⁷ J. R. Andrus, "Japan's New 'Gifts' to Thailand," in *Foreign Commerce Weekly*, September 4, 1943, p. 7.

Cotton and most other Dry Zone crops were ordinarily sown broadcast and then weeded by gangs of laborers (mostly women) with *pauktoes*, a type of heavy hoe. In recent years however, the Department of Agriculture has had considerable success in popularizing ox-drawn cultivators, and row cultivation has become common.

Fertilizers have ordinarily not been used except on paddy nurseries and specialized crops such as sugar cane. One agricultural specialist estimated some years ago that in parts of the Delta the point had been reached at which the annual "break-down" of the soil, together with its normal recuperative powers, kept it at about an even degree of fertility year after year. Fertilization would greatly increase fertility and output, of course. Cow dung is not burned for fuel, as in India, but aside from that portion used on nurseries, it is ordinarily piled up in the village and allowed to go to waste. Artificial or chemical fertilizers have long been stressed by the Department of Agriculture, but they were never widely used, and "green-manuring" has been practiced but little except on experimental farms and demonstration plots.

AGRICULTURAL IMPROVEMENT

As indicated in the preceding section, agricultural improvement was introduced chiefly through the Department of Agriculture, which was most successful in the introduction of soil-inverting plows, interculturators, and in some cases artificial fertilizers. It also had a large measure of success in introducing improved varieties of seed—sugar cane, groundnut, and rice being the outstanding achievements in this latter regard. American cotton, previously acclimatized in Cambodia, was a partial success, but cotton improvement was effected mainly by the

1 of two types evolved at the experimental station at
The department's chief seed-improvement efforts
naturally been devoted to rice, and the new strains
highly competent specialists at Hmawbi (32 miles
north of Rangoon) have given somewhat higher outturns than

local varieties, as well as having a greater appeal for the export market. Department of Agriculture farms at Myaungmya, Mudon, Akyab, and Mandalay also developed strains specially suited for their areas. The Myaungmya farm produced a strain (C 31-13) which gave a record milling outturn of about 60 pounds of white rice from 100 pounds of paddy.

The 1939-40 expenditures of the Department of Agriculture amounted to only Rs. 1,227,577; this sum was a great increase over previous allotments which had averaged but Rs. 871,466 during the previous five years. It is greatly to the credit of the departmental staff that so much was done with so small a budget. The country was divided into eight circles, for purposes of the department, each circle having a central experimental farm and a number of demonstration farms. By 1941 all but a very few employees were Burmans, and one of the senior Burmese employees was made Director of Agriculture by the Japanese, who attempted to have the department carry on with as few changes as possible.

The extent of the Agriculture Department's seed distribution efforts may be judged from the following figures of improved seed distribution from government farms for the year ending March 31, 1940.¹⁸

Crop	Quantity (in pounds)
Rice	23,758,898
Cotton	342,310
Groundnut	303,844
Sesamum	74,801
Beans	189,054
Gram	322,933
Wheat	6,985
Millet	37,400
Miscellaneous	34,761
Total	25,070,986
Sets of sugar cane....	422,200

The extension work of the Department of Agriculture appears to have been somewhat less successful in regard to imple-

¹⁸ *Report on the Operations of the Department of Agriculture, 1939-40.*

ments, but the figures for implements distributed by the department in 1939-40 are not discouraging:

Implements	Number
Improved shares	18,087
Plow bodies	3,571
Harrows	123
Seed drills	236
Intercultivators	
Indigenous	1,277
Imported	510
Sugar-cane crushers	26
Miscellaneous	306

The Irrawaddy Circle led on sales of improved plows. For the period 1936-41, demand for the specially adapted, locally made shares and bodies was greater than the local supply.

Agricultural education was not well advanced, the Agricultural College, Mandalay, having been closed throughout nearly all of the 1930's from lack of students—students who were destined to fill the sanctioned cadres for the agricultural service. It was started again, as a constituent college of Rangoon University, at the end of the decade, but time was not sufficient to tell if its graduates would take up farming for themselves when vacancies in the public service were once more filled. Several of the eight experimental farms had farm schools giving courses to bona fide cultivators lasting from a few weeks to nine months.

The American Baptist Mission had an agricultural school and farm at Pyinmana, central Burma, with fifty to sixty students, most of whom returned to farming. This school was largely instrumental in showing its students how to make use of the improved seeds and methods developed by the government agency.

AGRICULTURE DURING JAPANESE OCCUPATION

All indications point to a great drop in almost all phases of agricultural production under the Japanese. Outstanding among the causes must be listed the drastic shortage of cattle, discussed earlier in this chapter. A second reason was the lack of transportation facilities, making it impossible for a cultivator in,

say, Bassein District, to plant rice with the expectation that there would be a market for his produce in one of the near-by market towns. In 1944 rice prices were reportedly fifty times as high in Bhamo, near the Chinese border, as at Bassein. Lack of transport facilities made it impossible for merchants to take advantage of the discrepancy, and in so doing, to reduce it to reasonable proportions.

Again, the impressment of labor and vigorous "recruiting" for Japanese labor battalions interfered seriously with the supply of manpower available for cultivation. Some military activities, including air raids, interfered with normal agriculture, while others, such as requisitioning of supplies by the Japanese forces, discouraged agricultural enterprise. In Kyaukpyu Island only a third of the paddy land was reportedly cultivated in 1944.

An official Ba Maw government announcement of July 1944 stated that plowing was held up near Moulmein for lack of cattle. It was also announced that nearly 5,000 cattle died of disease in eighteen Lower Burma districts, presumably in the first half of 1944. Paddy was sown by broadcasting in Insein and Maubin districts, in 1944. Paddy was normally sown broadcast in Maubin District in areas where the water was so deep as to make transplanting unusually difficult, but additional areas appear to have been sown broadcast during the war, signifying a decline in output per acre.

The issue of great quantities of currency notes combined with lack of transport and of settled conditions of law and order to generate lack of confidence and to cause a setback in Burma's return to local self-sufficiency. This situation was accompanied by a drastic drop in living standards in Delta areas where no other crop was as suitable as rice. The absence of Chinese and Indian traders, with attractive commodities normally consumed by the cultivators, further diminished the incentive for normal production.

The Japanese claimed to have introduced double cropping in the Delta, but since about 1930 beans have been grown on paddy land particularly in Maubin District after the harvest

V

AGRICULTURAL RELATIONS

THE cataclysmic changes brought about in Burma by the Japanese invasion and the retaking of the country by the United Nations brings very much to the foreground the question of reconstruction. Political, social, and economic readjustments on a large scale are inevitable. The first two are beyond the purview of this study. Economic reconstruction, on the other hand, means very largely the restoration of a prosperous agriculture. In the years just preceding the present war, practically all students of Burmese economy, whether writing from the official or from the private angle, commented on certain trends in Burmese agriculture which required drastic change if the country was to have a sound agriculture based upon a stable and contented agricultural population. The nature of the basic problems may easily be appreciated from the contents of three acts passed by the Burma legislature shortly before the Japanese invasion. They related to (a) land alienation, (b) tenancy, and (c) land purchase.

PEASANT PROPRIETORSHIP VS. THE LANDLORD SYSTEM

As shown by the quotations from Furnivall, in chapter ii, pages 12-13, above, the traditional Burmese economic system did not provide for that type of private ownership of land which made it a freely exchangeable commodity, subject to mortgage and foreclosure proceedings. The semifeudal system aimed to keep the same families on the same land generation after generation. Domestic disturbances and other conditions caused exceptions to this rule, but in general the population was fairly stable although the living standards were probably quite low.

The introduction of British law and order was the primary

factor in inducing Burmans to migrate to British-held Lower Burma between 1853 and 1885---rather convincing evidence that the new system was not very objectionable from the standpoint of the indigenous people. The British also introduced engineering works, such as bunds (levees),¹ provided steam navigation of inland waterways, roads, a railway system, and a foreign market.

Burmans settled upon the land, cleared the jungle, erected small embankments (*kazins*) to keep the water over the roots of the rice plants, and became the owners of small plots of land.² But they were unable to secure much cash income during the first year, for a great deal of work had to be done with simple tools, and the purchase of an imported team of oxen was often not possible with the cultivator's limited means.

Karens were already resident in Lower Burma, and many of them took up land on the same basis as the Burmans, although on the whole they were somewhat less prosperous. Indians came as laborers, and in some cases as farmers, settling down, intermarrying with the Burmans, and gradually becoming Burmanized. None of these groups, however, possessed the capital with which to bring land under cultivation.

The Chettyars, a relatively small class of Indian immigrants, provided an answer to the cultivator's problem. They came originally from Chettinad, in Madras Presidency, South India, where they had built up a great capital by generations of money-lending. Probably some Chettyars migrated to Burma by the middle of the nineteenth century, but they began to attract widespread comment about 1880. It should be noted that Burmese moneylenders developed at a later stage, and never accumulated as much capital as the Chettyars. On the other hand, it is necessary to point out that Chettyars form a distinct group among immigrants from Madras. Most of the Tamils, also from Madras, earned a living by quite different methods.

¹ No less than 1,330,808 acres were protected from floods by government embankments in 1940, according to the 1939-40 report of the Public Works Department, Irrigation Branch.

² Furnivall, *Political Economy of Burma*, chapter 5, describes the various legal forms under which the development of Lower Burma took place.

The typical Burman had no knowledge of the intricacies of finance, or of the Anglo-Saxon judicial system. He knew only that he needed money for the purchase of cattle, tools, and sufficient food until his crop was ready for sale. The appearance of a foreigner with money to lend was very opportune, and he did not worry about the precise legal terms in the document which he must sign to get the money.

The expressed policy of the Government of Burma was the fostering of peasant proprietorship. However, as early as 1890, students of agriculture in Burma were beginning to be alarmed at the tendency of farmers to lose their lands to Chettyars and other moneylenders. The interest rates on land mortgages were normally 15 percent to 36 percent per annum— and very few enterprises in the world are believed to have earned a net return on invested capital equal to such rates. It must be emphasized, however, that there is no evidence that Chettyars violated the law in dealings with Burmese peasants. There have been numerous examples, on the contrary, of Chettyars “nursing” debtors and even reducing rates of interest to keep them paying what they could on outstanding indebtedness. The Chettyars found it more profitable, apparently, to avoid land ownership as long as debtors continued making substantial payments. Moreover, it is generally agreed that Burmese moneylenders charge even higher rates than the Chettyars—particularly as they often lend money on risks which the Chettyars would reject. The writer was once the week-end guest of a Burman who started life as a tenant farmer, and by economy, hard work, and the lending of money to necessitous borrowers, had foreclosed and taken possession of considerably more than 1,000 acres of excellent delta riceland.

Rather high prices were secured for paddy during the decade following World War I, but the collapse of world cereal prices during the depression of the early 1930's led to a corresponding fall in the value of lands in Burma.³ Millions of acres were ripe

³ Lower Burma riceland usually sold at a price per acre roughly equivalent to the value of 100 baskets of paddy. It was considerably over 100 rupees per acre before the world-wide depression, and fell to around 50 rupees during most of the 1930's.

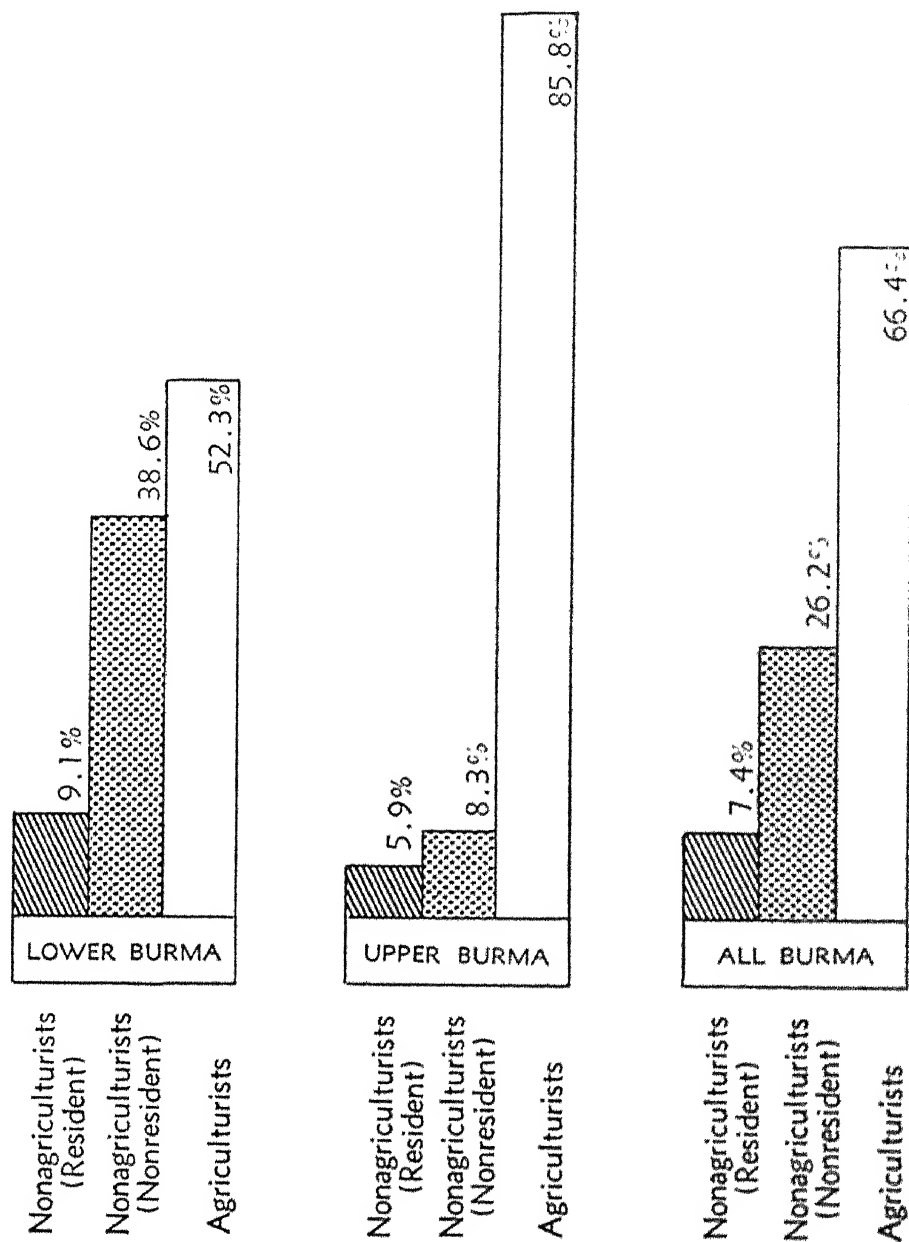
for foreclosure, since they were worth less than the outstanding indebtedness. As serious students had pointed out for some time, the borrowing of such large sums of money at such high rates of interest was uneconomical, and bound to cause trouble whether there was a fall of prices or not. The world wide depression, therefore, merely hastened the inevitable. The courts were clogged with cases of foreclosure, and many debtors handed over their lands without waiting for foreclosure. Once again it should be noted that the Chettyar creditor was, if anything, more lenient with his debtors than were indigenous creditors. Yet, almost in spite of themselves, the Chettyars became owners, by 1936, of approximately 2,500,000 of the 10,000,000 acres of riceland in the thirteen leading rice-growing districts which stretch from Arakan to the region of Moulmein, centering around the Irrawaddy Delta.

The Chettyars sometimes replaced Burmans with more tractable Indian tenants, but in many cases—perhaps in most cases—they tried to keep the original owners on the land. They even effected compromises, whereby part of the land was left in the hands of the former owner, free of mortgage, while the remainder was deeded to the Chettyar without lawsuit.

In addition to the land owned by the Chettyars, another large area consisted of land mortgaged to Chettyars, but not yet foreclosed. The extent of such indebtedness, after the wholesale acquisitions by Chettyars ceased, is not known but is estimated at 10 to 20 percent of Lower Burma's best riceland. The exhaustive and carefully compiled *Pegu Settlement Report* of 1932-34 showed Chettyars owning 36 percent of the land in the section of Pegu District covered by the report. The *Insein Settlement Report*, 1933-35, showed 31 percent of the land surveyed as owned by Chettyars, and another 13 percent by absentee landlords of "other races," presumably non-Chettyar Indians and Chinese for the most part.

The extent to which the policy of fostering peasant proprietorship had failed is roughly indicated by official statistics showing that almost half the land of Lower Burma was in the hands of nonagriculturists. The figures are shown in Chart 1.

CHART I
OWNERSHIP OF LAND IN BURMA



The figures in Table 12 show the trend of land ownership in the 13 principal rice-growing districts of Lower Burma for the years 1930-37. It will be noted that the Chettyars owned only 6 percent of the total area in 1930, but that due largely to the catastrophic fall in world cereal prices their percentage of holdings rose to 25 percent in 1936. Figures as reported by the Land and Agriculture Committee, 1938, in Part II, "Land Alienation," are as follows:

TABLE 12
CLASSIFICATION OF OCCUPIERS OF AGRICULTURAL LAND IN THE
13 PRINCIPAL RICE-GROWING DISTRICTS OF LOWER BURMA

Year	Total Occupied Area (1,000 acres)	Area Occupied by Non- agriculturists (1,000 acres)	Area Occupied by Chettyars (1,000 acres)	Area Occupied by Non- agriculturists (percent)	Percentage of Area Occupied by Chettyars to Total Area Occupied
1930.....	9,249	2,943	570	19	6
1931.....	9,305	3,212	866	25	9
1932.....	9,246	3,770	1,367	36	15
1933.....	9,266	4,139	1,782	43	19
1934.....	9,335	4,460	2,100	47	22
1935.....	9,408	4,687	2,263	49	24
1936.....	9,499	4,873	2,393	49	25
1937.....	9,650	4,929	2,416	50	25

Even the startling figures just cited do not tell the full story. Prior to the passage of the Land Alienation Act, 1940, there was no strict definition of the term "agriculturist" and many Burmans who inherited estates but lived and worked in cities, visiting their holdings on occasion, were classified as "agriculturists" for purpose of the foregoing statistics. It therefore seems safe to conclude that over half the land in Lower Burma was owned by people who did not, personally and continuously, either work the land or supervise and direct the cultivation of their holdings.

TENANCY

Perhaps the best indication of the extent to which peasant proprietorship has ceased to be typical of Lower Burma is the percentage of land let to tenants at full fixed rent. The figure was 19 percent in 1939, against 32 percent in Upper Burma, or 49

percent for the country as a whole.⁴ Comparison of these figures with those just cited for areas occupied by agriculturists and nonagriculturists makes it evident that many who were officially classified as "agriculturists" let their land to others and hence may not have been agriculturists in the ordinary, accepted meaning of that term. It was generally held that the typical landlord had little genuine interest in either land or tenant, so long as he secured the highest possible income with complete regularity.

Although numerous large estates grew up, owned by Burmans as well as Chettyars, there was very little large-scale agriculture in Burma. The typical unit of cultivation was fifteen to thirty acres—let to a tenant. Thus the large landlord dealt with a large number of tenants, each of whom worked independently of the others. This fact must be borne in mind in connection with schemes for utilization of tractors in postwar Burma. Rents were increased by landlords whose interest in the land was almost purely economic, and who did not partake fully of the life of the countryside. The result was that tenants did not stay for long in any one village. The constant migration from village to village broke down the Burmese social system, with its restraining influence on the potentially lawless, and was probably the outstanding cause for Burma's phenomenally high rate of murders. The twelve or thirteen million people living in the areas covered by crime statistics just before the war experienced 800 to 1,000 murders per annum, and a correspondingly large number of other crimes.

Table 13 reproduced from Part I, "Tenancy," of the *Land and Agricultural Committee Report*, 1938, sets forth the "proportion of the rented area held by tenants who have been in possession of their present holdings for one year, two years, three years and four years or more."

In other words, approximately half the tenants changed holdings every year, and an unknown proportion of them

⁴ All such statistics relate to "Divisional Burma" and exclude the Shan States, Karenni, the Chin Hills, the Kachin Hills, etc. The excluded areas were approximately self-sufficient, and Shan potatoes were the only agricultural export of importance.

changed villages as well. An economy of this kind is not a satisfactory basis upon which to build a sound society—a fact which was well recognized by officials and nonofficials for a number of years before the Japanese invasion. By the 1930's it was abundantly evident that the three economic systems—those of the feudal-minded Burmans, the business-minded Chettyars, and the law-and-order-minded British—had not, in combination, produced a desirable situation.² Perhaps the most hopeful part of the whole situation was the recognition of the need of reform on the part of all three communities, and a fair degree of co-operation in working out a solution. The specific reforms tried in 1939-41 and suggested for the future will be discussed in a later section.

TABLE 13
STABILITY OF TENANCIES

District	Date of Settlement	One Year (percent)	Two Years (percent)	Three Years (percent)	More Than Three Years (percent)
Amherst	1930-33	40	19	12	29
Pyalmana	1930-32				
Irrigated		34	18	14	34
Unirrigated ..		41	21	12	26
Pegu	1932-34	48	17	8	27
Insein	1933-35	47	21	10	22
Myaungmya ...	1933-35	43	19	13	25
Tharawaddy ...	.....*	25	12	13	50
Hanthawaddy ..	.....*	24	16	11	49
Henzada .....	.....*	15	11	11	63
Pyapon .....	.....*	18	17	13	52
Thahton .....	.....*	35	24	14	27
Toungoo .....	.....*	25	16	11	47

* The figures for Amherst, Pyalmana, Pegu, Insein, and Myaungmya relate to the entire districts and are taken from Settlement reports. Figures for the other districts are Land Records Department figures for selected assessment tracts during 1936-37.

Calculations by Settlements Officers and others of the balance sheets of peasant farmers and of tenants have almost invariably produced the conclusion that the tenant operates at a deficit. That is, his rent, out-of-pocket costs of cultivation, cost

² J. R. Andrus, "Three Economic Systems Clash in Burma," in *Review of Economic Studies*, London, February 1936.

of food, and interest on the small loan he is able to get, more than exceed gross return. This conclusion is reached both with respect to the Delta and with respect to the Dry Zone.

THE AGRICULTURAL LABORER

The Chettyars were by no means the most numerous body of Indians participating in the agricultural development of Burma. Large numbers of Telugus, Tamils, and other Indians came as laborers, worked in the plowing and harvesting of the crop, and then took employment in the rice mills as the advance of the season opened up alternative offers of work at rates considerably higher than those available in India. These Indian immigrants were at one time subsidized by the government in order more quickly to develop Lower Burma's fertile ricelands. Typically they came in time for the harvest, then shifted to the rice mills, and at the end of the milling season returned to their homes in India—greatly to the profit of the British India Steam Navigation Company and the Scindia Steam Navigation Company.

As the indigenous population of Lower Burma increased, and more and more Burmans became landless laborers, the proportion of Indian laborers declined, although it is doubtful if their total numbers declined prior to the Japanese occupation. Burmese laborers often lived with their employers, receiving, in more prosperous times, over 100 baskets of paddy plus ten months' board and lodging for the season's work. In recent years the typical laborer has worked for three or four months at plowing and planting and for two or three months at harvest time, eking out an existence the remainder of the year at work on the roads or other public projects, or taking employment in the towns, particularly at rice milling. Furnivall estimates that agricultural wages have fallen by 20 percent since 1870, and points out the near-impossibility of an agricultural laborer working for a few years and saving enough to become a tenant and then a landowner. Perhaps it is more from the class of landless laborers, with no steady, year-round work, that criminals are most commonly recruited. No statistics are available,

but it seems probable that they drift from village to village even more readily than do the tenants.

In view of the steady increase in indigenous rural population, without a corresponding increase in Indian rural population, the share of the latter in Burma's agriculture had declined very greatly before the Japanese occupation. Figures of occupational breakdown in 1941 are not available, but in 1931 agriculture and related occupations employed but 176,208 Indians against 2,450,918 Burmans and 1,643,322 of other indigenous races. It is hardly reasonable, therefore, to contend that Indian labor is essential to the restoration of normal agricultural activity in Lower Burma. Moreover, the seasonal character of rice cultivation means that during about half the year a fair proportion of the four million Burmans, Karens, etc., employed in agriculture, may be persuaded to work on the roads, railways, and other large projects which provide many unskilled or semi-skilled jobs. The Indian, in other words, is much less essential both as agricultural laborer and as construction coolie than during the period of Lower Burma's most rapid development.

It may be noted that a fairly large proportion of Indians engaged in agricultural occupations were not laborers on the lands of others, but tenants or owners in their own right. For instance, the Kyauktaga Grant and the Zeyawaddy Grant were farmed chiefly by Indians.

CONTRASTS BETWEEN UPPER AND LOWER BURMA

From the foregoing it is evident that it is Lower Burma which has much the more acute rural problems. Nearly half the land of Lower Burma was owned by nonagriculturists (even according to the definition which permitted many non-agriculturists to pass as agriculturists), against one-seventh in Upper Burma. Land let at full fixed rent amounted to 59 percent of the total in Lower Burma, against 32 percent in Upper Burma. Naturally, the Upper Burma villager is more likely to remain at home, than to wander from village to village, as does his fellow-countryman farther south.

Somewhat paradoxically, part of the reason for this con-

trast lies in the natural advantages of Lower Burma—a fertile soil, correctly watered by dependable rains, with no likelihood of crop failure. The precarious rainfall of Upper Burma makes crop failure a common occurrence outside the irrigated tracts, reducing the opportunity to mortgage the land to moneylenders.

Lower Burma's regular harvests naturally provide a more adequate basis of credit than do the fluctuating harvests of the Dry Zone.⁶ Therefore, Chettyars and other moneylenders loaned vast sums of money on the security of Lower Burma land, at a time when that land was being rapidly developed and made a part of world economy. On the other hand, Chettyars loaned very little money in Upper Burma, and in any case the demand for loans was not so great, for Upper Burma's oilseeds, millet, etc., were consumed locally to a much greater extent than the rice of Lower Burma.

In spite of these and other contrasts between the two chief divisions of Burma, it is the opinion of many specialists that Upper Burma was tending to face much the same problems as Lower Burma. Indigenous moneylenders were increasing their holdings of land, and one-third of the land was already let to tenants (albeit, in some cases, to other Burmans, while the owners took a try at renting someone else's land).

CHETTYARS AND OTHER MONEYLENDERS

In December 1944, A. M. M. Vellayan Chettyar, leader of his community in Burma for many years, made a widely quoted speech in which he pointed out the important role played by Chettyars in the rapid development of Lower Burma, and stressed Burma's need for foreign capital in the reconstruction period following this war. Few, if any, will deny that without the Chettyar capital (officially estimated at Rs. 500,000,000 invested in agriculture alone in 1930, equal to a little over \$180,000,000 at the exchange rate then current) the ten million acres of Lower Burma riceland would have been brought under cultivation much more slowly. With the benefit of hind-

⁶ Upper Burma, of course, includes a wet zone in Katha, Bhamo, and Myitkyina districts, but typically it consists of the dry belt, to which the remarks in this section apply.

sight, however, there are many students of the problem who believe that this rapid development was bought at too high a price from the standpoint of Burmese rural welfare.⁷

As indicated above, Chettyars charged interest rates of 15 to 36 percent or more on good first mortgages of real estate. They selected their risks so that few of their loans were against land subject to disastrous flood, drought, or other natural hazards. Hence, the 25 percent of Lower Burma's ricelands owned by them in 1936 and thereafter probably accounted for somewhat over 25 percent of the value of all such lands. Their great advantage, from the standpoint of Burmese borrowers, was the fact that Chettyar agents were scattered at convenient locations throughout the rural areas, could be seen at convenient hours, and would lend money with a minimum of waiting and red tape. The rate of interest did not greatly worry the simple cultivator at the time of the loan, whereas the formalities required in obtaining loans through a government office, for instance, seemed insurmountable.

There were over 1,300 firms, members of the Nattukottai Chettyars Association, Rangoon, plus about 200 other Chettyar firms. They ordinarily had Burma headquarters in Mogul Street, their offices giving little hint of the great amounts of money dealt in. They accepted deposits, and sometimes borrowed a little capital from banks, but much the greater part of their capital was put in by the proprietors, on a family-firm basis. Agents were stationed in large villages for periods of three years, and at the end of a three-year period the agent was under great pressure to bring payments up to date. There were three to five employees in typical agencies. In recent years the tendency was to settle accounts yearly, in order to comply with the Income Tax Law. In addition to a first mortgage, the Chettyar also took a promissory note for part of the advance.

In case of default, possession could be secured more promptly suing on the pronote than by foreclosing the mortgage.

⁷ Mr. Chettyar was assassinated soon after his return to Burma at the close of the war. The murderer was a South Indian, not a Burman. He reportedly harbored a grudge due to a prewar business transaction.

It is almost certain that most Chettyars regretted, however, the turn of events which made it impossible for them to protect their capital in any other way than by taking possession of the land. It is certain that landownership could not give returns of 15-36 percent, and it is equally certain that landownership was accompanied by political agitation of a type the Chettyars would naturally wish to avoid. During the 1930's the writer saw several tracts of land which remained uncultivated for a year, as they belonged to Chettyars and suitable tenants could not be found in time.

The Indo-Burmese race riots of 1930 and 1938-39, as well as the rebellion of 1930-31, probably intensified the Chettyar desire to avoid landownership if possible.

Burmese moneylenders were of considerable importance, and their interest rates were higher than those of the Chettyars. They sometimes took a bill of sale to protect their legal rights instead of pronotes. No estimate is available as to their investments, but such investments were certainly much smaller, in aggregate, than loans by the Chettyars.

In addition to these two chief sources of agricultural credit, the Government of Burma has long made loans to cultivators, for the purpose of mitigating the evils of high rates of interest and foreclosures of mortgages. However, inevitable "red tape" interfered to such an extent as to keep direct government loans at a very low figure. The following figures for the year 1938-39 are taken from the *Land Revenue Report* for that year.

Perhaps the two aspects of the foregoing figures worthy of comment is their small size, compared to the estimated Chettyar loans on agricultural property, etc., and secondly, the very high proportion of loans on which principal and interest were remitted, suspended, or overdue. No one has seriously suggested the direct lending of money by district officials as the best means of solving the urgent problem of Burma's agricultural finance.

ATTEMPTED REFORMS OF 1938-41

Land Alienation.—As early as 1890 there was pressure for a Land Alienation Act to protect the simple and nonbusiness-

ACCOUNT OF GOVERNMENT AGRICULTURAL LOANS FOR THE YEAR 1938-39
(APRIL 1, 1938, THROUGH MARCH 31, 1939)*

78

<i>a) Loans, Collections, and Adjustments</i>	<i>Rupees</i>	<i>Rupees</i>	<i>Rupees</i>
Loans at Commencement	903,819		
Loans during the year...	500,784		
	<u>1,404,603</u>		
		Collections due during the year	1,244,244
		Actual Collections on dues during the year ..	655,175
		Loans remitted	14,083
		Loans suspended	146,926
			<u>816,184</u>
		Collections due at end of year	428,060
			<u>1,244,244</u>
			<u>1,244,244</u>
		Collections on dues	655,175
		Excess and before due collections	4,489
		Loans remitted	14,083
		Loans suspended	146,926
		Balance of loan for collection in subsequent years	583,930
	<u>1,404,603</u>		<u>1,404,603</u>
			<u>1,404,603</u>

BURMESE ECONOMIC LIFE

*b) Interest on Loans,
Collections, and
Adjustments*

Arrears suspended and overdue at commencement of year	39,649	Interest collected during the year	56,873
Interest fallen due within the year	49,338	Interest remitted during the year	3,758
		Interest suspended during the year	5
		Interest balance due for collection at end of the year	28,351
	<u>88,987</u>		<u>88,987</u>

*c) Over-all picture
(Loan and Interest)*

Loan and Interest....	1,493,590	Collected	716,537 (47.9%)
		Remitted	17,841 (1.2%)
		Suspended	146,931 (9.9%)
		Balance	612,281 (41.0%)
	<u>1,493,590</u>		<u>1,493,590</u>

* Based on the *Land Revenue Report* of the Government of Burma for the year.

mindful Burmese peasant from the results of his own lack of business acumen in dealing with Chettyars and other money-lenders. By 1908-10 the Government of India was pressing the matter, and Lieutenant Governor Sir Herbert Therkell White attempted to secure the passage of an act, modeled on that of the Punjab. However, owing to the united opposition of Chettyars, conservative business interests, and some senior members of Sir Herbert's civil service, the proposal was defeated.

The Land and Agriculture Committee, appointed in 1938 under the chairmanship of Mr. James Baxter, made a careful study of the situation, and proposed a Land Alienation Act. After further debate and consideration this Act was passed in 1941, shortly before the Japanese invasion, and there was no chance to put it securely into force.

Against the Act were marshaled the arguments of laissez-faire economics. Capital was necessary for productive activity, and would not be available unless security was provided for the lender. If the land could not be given in mortgage, and the creditor could at best hope to take it for only fifteen years, after which it must be returned to the original owner without further payment, Chettyars and others would not lend. These arguments undoubtedly had some force, but the majority view was that capital at Chettyar rates was worse than no outside capital at all. Parenthetically, it may be noted that after the world-wide depression of the early 1930's Chettyars ceased to lend, except to their own tenants. Burma's agriculture continued, and production increased slowly in spite of the cessation of new loans from outside sources. Perhaps the chief source of new loans in this period was the village shopkeeper—usually Chinese or Indian—who advanced a few baskets of rice and daily necessities against the promise of payment in a given number of baskets of paddy, two to six months later. The interest rates on such loans worked out at 250 percent or more per annum. However, the amounts loaned were usually small, and the periods short. On the other hand, they give the Chettyars ample reason to point out that their own rates are extremely low, compared to interest rates charged by other communities.

Mr. Baxter and his colleagues were well aware of the fact that the horse had disappeared before they attempted to lock the door with a Land Alienation Act. Agriculturists owned but half the land of Lower Burma, and the much stricter definition of agriculturist provided by their Act would still further reduce the proportion of land immediately affected by it. The Act provided that land owned by an agriculturist, with very minor exceptions, could not be sold to a nonagriculturist, or foreclosed by a nonagriculturist, or otherwise come into possession of a nonagriculturist. An agriculturist was defined as anyone who personally worked the land as his chief source of livelihood, or who continuously supervised others who worked his land, or who had done so until incapacitated by age or other disability. However, the Act did not aim to protect agriculturists against the foreclosure of mortgages already existing at the time of its passage. It is doubtful if more than 15 percent of the land of Lower Burma was, by 1941, owned by genuine agriculturists, and unmortgaged. Had the Act been passed in 1890, or even in 1910, it would have been a different story.

Yet the Land Alienation Act, if revived and enforced, may prove to be a very useful one. If the Government of Burma should ever embark on a land-purchase scheme, reselling the land to peasants, the Land Alienation Act might be the only feasible means of preventing the land from falling back into the hands of nonagriculturists.

Tenancy.—Another result of the Baxter Committee's work was the Tenancy Act. The chief defects of the tenancy situation had been the following: (a) unduly high rents; (b) yearly leases—no security of tenure; (c) lease sometimes contained unfair clauses, for instance giving the landlord first option on purchase of the grower's part of the crop; (d) many tenants relet their land to subtenants, themselves becoming useless middlemen; (e) little remission of rent in bad years.

The Tenancy Act of 1939 proved unworkable, due chiefly to the inability of district officers to make the tens of thousands of careful investigations which would have been required for its satisfactory implementation at that time. The aim of the

Act—to remedy the defects just cited—was sound, and the House of Representatives passed an amended act on March 31, 1941, but it appears not to have been passed by the Senate, owing to the outbreak of the war.

In July 1946, the 1939 Act was repealed and a new Tenancy Act put in its place.⁸ It applies to cultivators of fifty acres of land or less, and also provides for considerable careful work by district officers. The "normal gross outturn" is to be computed by local revenue officers with the assistance of three *thamadis* or assessors chosen from among the villagers. Then the revenue officer fixes a "standard rent" which is to be paid for the ensuing three years, unless changed at the end of one year by successful application of landlord or tenant. Careful and apparently fair provision is made for priorities on the year's produce, as between rent, wages, loans, etc. The landlord is required to compensate the tenant for improvements made with the former's written permission. The tenant is given secure tenure, provided he pays his rent and otherwise treats the landlord fairly.

Land Purchases.—The most immediate and drastic reform proposed by the Baxter Committee dealt with the purchase of Chettyar and other land by the government. The land might then be sold on long-term contract, with provision for very low rates of interest; or it might be let to tenants by a government office, as was done in the case of several thousand acres of land along the Sittang River where the government colonies were located. This latter arrangement might prove, from many points of view, a distinct success.

Although the Land Purchase Act was passed shortly before evacuation, it appears that there was insufficient time for the actual purchase of any land. The prospect before a commissioner entrusted with the task of administering the Act is a most formidable one. No less than 70 percent of the agricultural land of Hanthawaddy District belonged to nonagriculturists in June 1939, against 68 percent in Insein, 67 percent in Pegu, and 71 percent in Pyapon. An official with excellent opportunities

⁸ *Burma Gazette*, July 6, 1946, Part I, pp. 390-98.

to study this problem estimated that the Lower Burma land in the hands of nonagriculturists was worth between Rs. 540,000,000 and Rs. 672,500,000, while the country's total would be between Rs. 655,000,000 and Rs. 787,500,000. In other words, it would take four or five years' normal prewar revenue of the Government of Burma to buy the land in question. Probably the only way in which any substantial portion of the problem could be tackled within a reasonable period would be the exchange of government bonds at low rates of interest for the land in question.

Nevertheless, the agrarian problem in Burma has been so acute in recent years that very serious thought should be given to even so drastic a measure as wholesale land purchase. It seems axiomatic that once the land has been purchased it should be let or sold to tenants on conditions which would make impossible its passing back into the hands of absentee landlords. One outstanding student of the problem even suggests experimentation with collective farming of newly acquired government estates.

The Government of Burma made an interesting, and rather successful experiment by directly managing 318,987 acres (figure as of June 30, 1939) under the State Colonies Department and another 31,433 acres under the control of Deputy Commissioners in five different districts. Financial results for 1938-39, set forth in Statement XIX of the *Land Revenue Report*, were as follows for government estates:

GOVERNMENT ESTATES

	Under Deputy Commissioners	State Colonies Department
Gross area (acres)	31,433	318,987
Cultivated area (acres)	25,640	134,968
Assessed area (acres)	27,018	134,570
Rent Arrears (rupees)	31	104
Current Rent (rupees)	83,701	553,195*
Rent Collected (rupees)	79,664	547,917
Remitted (rupees)	4,038	5,079
Outstanding (rupees)	30	303

* Revenue and rent demand.

It will be seen that the State Colonies Department collected a very high percentage of rent and revenue due. This compares

most favorably with collections of interest and principal by district officials on direct government loans.

REGULATION OF MONEYLENDING

The Land and Agriculture Committee published Part IV of its report in 1939 entitled *Regulation of Moneylending*. The Committee presented a bill in draft form, but this bill was never enacted into law. It would have forced moneylenders to register, would have regulated their accounts, limited interest rates to 12 percent per annum on secured and 18 percent on unsecured loans, and would have outlawed payment of compound interest. Even for loans advanced before the commencement of the act, no court was to enforce the payment of arrears of interest greater than the principal sum of the original loan.

THE JAPANESE PERIOD

The Japanese took over the problem of Burma's land relationship with one distinct advantage—the absence of many of the owners and moneylenders to whom the Burmese agriculturists would normally have had to pay large sums of money. The Japanese could thus be quite generous at the expense of Chett-yars and others who had evacuated or had lost their lives during the occupation.

In 1943 they caused a Tenancy Ordinance to come into force, providing for a halving of normal rents for the year 1942–43. It is doubtful, however, if they had the administrative machinery with which to enforce the act any better than its ill-fated predecessor of 1939–41 had been enforced. In particular, the decline in demand for rice, and generally upset conditions, placed the tenants in a very strong bargaining position, so a drastic reduction of rent could not have been avoided—ordinance or no ordinance.

In spite of the fact that he actually paid little rent, interest, or taxes during the war, the Burmese farmer did not have an enviable lot. Mr. B. O. Binns, Rural Development Commissioner, described the farmer's plight in April 1946 as follows:

The Burman farmer is discouraged and despondent. For several years he has grown rice which no one seemed to want and

which has rotted in his granaries. He cannot buy the things he wants. His land is covered with weeds. He is short of cattle and his carts, plows and implements are old and worn. The cost of living and cost of cultivation are high and money is short. Parts of the country are overrun by bands of wellarmed robbers.

THE GOVERNMENT PROGRAM

The interim governments of Sir Reginald Dorman-Smith, Sir Henry Knight, and General Sir Hubert Rance have thus far limited themselves to the promulgation of the Tenancy Act and of emergency measures such as the much-criticized Land Disputes Act of 1945 to facilitate the production and sale of rice. In mid-1945 the Civil Affairs Service distributed leaflets urging peasants to plant the most extensive crops possible and assuring them that they would be permitted to enjoy the fruits of their labors. Some cultivators, particularly those organized into nationalist- or Communist-inspired peasants' unions, interpreted this promise to mean that they would not be required to pay rents to absentee landlords or to pay land taxes for that year. Early in 1946 the governor announced that land taxes must be paid but they might be revised downward if crops were poor through no fault of the cultivator. This policy was the subject of continued bitter protest.

On April 5, 1946, the *New Times* of Burma reported details of a plan to distribute plowshares, tools, clothing, and household necessities to cultivators, the loans to be canceled in proportion as the recipients increased their cultivation of paddy. At harvest time there was to be a settlement, each cultivator being credited with 12 rupees for every acre planted in excess of the area planted by him in 1945-46. Cloth in particular was distributed in rather large quantities in pursuance of this scheme. The future status of these loans seems to be rather ambiguous. An official translation of an item in the vernacular paper *Taing Lone Kyaw* of February 26, 1947, quotes U Aung San as saying: "Government will have to write off the agricultural loans and thus they (the agriculturists) need not repay the loans when asked to do so." Official statements were issued by the Government on March 30 and April 26 pointing out the neces-

sity of faithful repayment of the 1946-47 loans. In the April 26 announcement the Financial Commissioner also announced that deputy commissioners had been asked to expedite the issue of loans for the purchase of cattle, seed, and other essential agricultural items.

The *Burma Gazette* of May 17, 1947, contained the text of the "Agricultural Debts Moratorium Act, 1947" which proclaimed a six-months moratorium on agricultural debts contracted prior to the resumption of civil government, October 16, 1945.

Also in the *Taing Lone Kyaw* translation is the statement, attributed to U Aung San, that "landlordism will be abolished after the attainment of independence, but this cannot be done by the stroke of a magic wand as he (Bogyoke Aung San) does not possess one."

UNSOLVED PROBLEMS

The outstanding unsolved agrarian problem in Burma is still that of the vast amount of land owned by absentee landlords—particularly that owned by Chettyars and other foreigners. The government has yet to announce a long-term program for the solution of this vexing problem. Revival of the land-purchase scheme would appear to be the most obvious solution, but the resultant government debt would be very large in proportion to Burma's normal revenue. Such an act would have to be carefully drawn up and ably and honestly administered over a whole generation to avoid involving the government and the farmers in extremely unpleasant consequences.

The need for and abuse of credit contributed chiefly to the absentee landlord problem in Burma, and a land-purchase scheme would not provide the peasant cultivator with the required cash. Nearly every known scheme was tried, at least on a small scale, in the prewar period, and none proved outstandingly successful. Perhaps the wholesale introduction of co-operative credit might solve the problem, but the collapse of the co-operative movement at the end of the 1920's does not lend to over-sanguine expectations in this regard. The movement

was being revived and carefully nurtured by a small government department at the time of the Japanese occupation, and it seems to have survived the Japanese rather well. Burma has a high rate of literacy, and if officers of co-operative credit societies will take over the clerical and administrative work, without which no society can succeed, it may be possible to provide outside capital at rates which are not ruinous to the cultivator. The most successful co-operative societies were those which entered the field of marketing as well as of credit, for such societies were in the best possible position to collect payments from members regularly.

To the two perplexing problems just cited must be added the new problem of motive power. Burmese farms are large enough to require the use of tractors or livestock for plowing, and it is difficult to believe that rice acreage can greatly exceed the figure of 7,760,000 acres matured in 1946-47 except as the natural increase of the cattle population over a period of years restores that population to approximately normal. True, large-scale tractor imports might replace cattle, particularly in the Dry Zone, permitting animals to be shifted to Lower Burma. However, the use of tractors would involve an ambitious scheme of tractor stations for servicing and repair, and might involve far-reaching changes in landlord-tenant relations, the size of the working unit, and in the ownership of land itself. There is no evidence that either British or Burmans will adopt a policy of widespread use of tractors, particularly while the country's economy is so hard-hit by the war and imports must be purchased with borrowed money. Nor is there much likelihood of any large-scale attempt to import cattle from India or elsewhere.

A BURMESE NATIONALIST PROGRAM

A nationalist organization, the All-Burma Peasants' Organizations Conference, met at Henzada on May 9-12, 1946, and passed numerous resolutions.⁹ The program started with a resolution that "no agricultural land shall be the private prop-

⁹ Reported at length in *The Burman*, May 28, 1946.

erty of any individual." However, a later resolution provided that "owner-cultivators [should] be allowed to carry on independently unless any of them desires to adopt collective farming by co-operative methods." The resolutions appear to have been at least inspired by Communist influence, for there is reliance throughout upon government aid, with government controlling prices, preventing attachment of peasant property during the agricultural season, and no provisions to benefit the non-peasant. However more moderate counsels seem to have prevailed, for there was to be no confiscation and "agricultural lands owned by non-cultivating landlords [should] be acquired by government in return for adequate compensation," although the source of the compensation was not selected.

In the spring of 1946 practically all organized peasants' movements were under the control of one or the other of the two branches of the Communist Party in Burma. The more radical of the two, the Communist Party (Burma) had split from the Communist Party of Burma and was organizing Red Flag Cultivators Unions throughout the country. It advocated nonpayment of rent and taxes, and for this and other reasons was declared unlawful by a government proclamation on July 16, 1946. By the spring of 1947 there seemed fair prospect that the leftist but non-Communist Anti-Fascist Peoples' Freedom League—the dominant party, led by U Aung San, was gaining the upper hand in the struggle for the loyalty of the peasants' unions, except in two or three districts. Perhaps by the time these lines are printed the AFPFL government will have announced its program of agrarian reform.

VI

THE CO-OPERATIVE MOVEMENT

THE CO-OPERATIVE movement in Burma was different from those of Europe and America in that it was (*a*) sponsored almost exclusively by government, (*b*) largely limited to rural areas, and (*c*) predominantly concerned with credit.

EARLY GROWTH AND COLLAPSE

There are, of course, exceptions to each of the three generalizations, as will be noted below. Early in the present century co-operation was tried, first in India and then in Burma, as an answer to the extremely difficult problem of agricultural credit. A Registrar of Co-operative Societies was appointed, and given a staff for propaganda, administration, and supervision. The Burmese movement was largely inspired by the Indian co-operative movement, particularly that of the Punjab. Mr. Cohart, Registrar of Co-operative Societies in the Punjab, headed a commission of inquiry into the Burmese movement in 1928-29.

According to a Registrar of the 1930's, the records of traveling parties of co-operative evangelists show that they often spent less than a day in a village, preaching the doctrine of salvation by co-operative credit to villagers whose lives in recent years had become more and more individualistic, and who had never, in any case, had experience with co-operative projects of a monetary nature. The naïveté of the villagers in money matters was complete. Hence when anyone came to the village with a proposition which appeared to offer possession of large sums of money, they were quite willing to sign the required papers—whether presented by a Chettyar's agent or by officials

forming co-operative credit societies. In neither case was great thought given, at the time of the loan, to the ways and means of accomplishing repayment of principal with interest.

After setting up the society, the officers would briefly instruct the managing committee and its secretary in the essential bookkeeping operations involved, and forward to headquarters the signed papers, with the suggestion that a loan be granted. In too many cases such loans were granted long before the committees or the individual members learned enough about co-operation to make it work.

One outstanding difficulty, particularly in Lower Burma, was the use by members of funds borrowed from societies for purchase of land or of cattle. The co-operative society was adapted from those of Schultz-Delitzsch, Raffeisen, and Luzzatti—eventually coming to bear more resemblance to the latter. It was definitely not suited to the granting of long-term or intermediate credit, but only to the granting of short-term loans, repayable at the next harvest time.

Bolstered by ever-fresh advances from the government, and by money supplied by the public through the Burma Provincial Co-operative Bank or the intermediate co-operative banks which formed part of a rather complicated system, the societies grew in number and apparent strength. By 1925 there were over 4,000 societies, with upwards of 90,000 members, a share capital of Rs. 3,500,000, and a working capital of Rs. 17,800,000.

By 1929, however, before the world-wide fall of cereal prices had time to affect Burma, the Provincial bank was found to have been working at a loss for some years, and was liquidated by the government at a cost to public funds of Rs. 3,500,000. The Pegu and Prome central banks, however, designed to assist societies in their respective districts, weathered the storm.

In addition to the weaknesses already mentioned, the co-operative movement also suffered, in Lower Burma, from having to depend on members who were essentially migratory. Furnivall¹ points out how difficult it is to have societies where

¹ *Political Economy of Burma*, pp. 158-59.

members actually know one another, and can safely give joint guarantees of loans, when membership is continually shifting.

RECONSTRUCTION PERIOD

Nearly all co-operative societies disappeared or became dormant during the first few years of the world depression, but about 1935, largely under the wise leadership of U Tin Gyi, Registrar of Co-operative Societies, a new, cautious, and sounder approach was made to the problem.

Well-trained officers were sent to unravel the affairs of dormant societies, give thorough training in co-operative principles, and either liquidate the societies, or give them a new start. This often involved taking title to large areas of land and then selling the land back to the former owners (members of the societies) at prices which might involve a book loss to the central co-operative banks and therefore to the government. However, the agreement provided for payment in kind (i.e., in paddy, in most cases) so that the cultivator often turned over his entire salable crop to the society, which deducted the payment for interest, land revenue, part of the principal, etc., returning the balance to the cultivator. In view of the lack of experience of the cultivator, it has been found highly desirable to secure repayment at the earliest possible moment, lest the good intention of fulfilling financial obligations be never acted upon. In other words, the "rent purchase scheme" enabled thousands of cultivators to start buying back their properties through payments which resembled rent. One or two small paddy mills, owned by the Co-operative Department, facilitated payment in kind for many members.

By June 30, 1940, the Annual Report on the Working of Co-operative Societies in Burma reported that there were 1,273 village societies, of which 807 were reconstructed societies, 117 new societies, while the remaining 349 were in process of liquidation. Overdue loans were reduced from a high of Rs. 11,670,445 to Rs. 2,271,156—partially, of course, by being written off.

The Japanese-sponsored Ba Maw government announced

that the number of societies in Burma at the outbreak of the war stood at 2,051, of which 1,599 were agricultural credit societies with a membership of 81,804 and a working capital of Rs. 1,600,000.

As a partial result of the studies of the Baxter Committee on Land and Agriculture in 1938, a cautious beginning was made in 1940-41 by the setting up of small co-operative land-mortgage banks at Pegu, Prome, Henzada, and one other center, under the administration of U Po Sa, a senior member of the government service. These banks were designed to relieve the co-operative credit societies of the need to lend money for long or intermediate periods, to their members. Up to the time of the Japanese occupation, however, these banks had not become an important factor, and little is known of their organization or activities.

THE JAPANESE PERIOD AND AFTER

The Ba Ma'w government, operating during the war under Japanese control, attempted to keep co-operative societies alive, but by the end of 1943 an official report claimed advances to members of only Rs. 53,201, by the 1,222 agricultural credit societies. There was a plan to establish five land-mortgage banks, but it was never implemented.

The inflation during and after the Japanese period seems to have wrecked great numbers of societies. The official *Burma Gazette* of April 13, 1946, contains a list of 150 co-operative societies to be wound up by a Co-operative Department official in Pakokku and Mandalay districts alone. On the other hand, the peasants' organization resolutions mentioned in the previous chapter contained arguments in favor of continuing the co-operative movement, and the prewar staff appears to have been reorganized and strengthened during the rehabilitation period.

According to the India-Burma Office "*India and Burma News Summary*" of February 27, 1947, the Government had approved the issue by the Co-operative Department of Rs. 2,000,000 to the rural credit societies. From the end of the war to December 31, 1946, 156 societies were reconstructed,

and 66 new consumer societies had been registered. The growth of consumer societies appears to have been due to government aid with respect to rationing and otherwise.

GOVERNMENT ESTATES

The Government Estates, or State Colonies, were mostly located along the Sittang River, in Pegu District. They were not part of the co-operative movement, but were allied to it. Their financial returns were a happy contrast to those of the co-operative societies, at least in the earlier period. Furnivall states that, after various legal systems for land settlement and development had been tried,

there still remained considerable areas of waste land in certain parts of the country and it was decided to treat some of these as Government Estates. Selected colonists have been settled in these Estates and the funds necessary for reclaiming the land have been provided by grouping the colonists in cooperative credit societies. Mr. Binns' Settlement of certain portions of Pegu District in 1932-34 included the Pyuntaza and Yitkangyi Estates. The periodic floods on the former estate made it difficult to draw conclusions. However, about 30 percent of the Yitkangyi Estate was sublet by the Government's tenants, which indicates a flaw in the system. On the other hand, the report would seem to indicate that the average net income of cultivators on the Yitkangyi Estate is higher than elsewhere in the settlement area.²

Government Estates cannot be included under the heading "co-operative societies" but as administered in Burma they are closely related to the co-operative movement with regard to credit as well as marketing. The Ba Maw government reportedly continued the system of Government Estates, and some students of Burmese rural problems suggest their manifold expansion as a consequence of large-scale purchase of land by government from Chettyars and other nonagriculturists.

URBAN SOCIETIES

On June 30, 1939, an official report stated that there were 174 nonagricultural credit societies. Such societies were ordin-

² Furnivall, *Political Economy of Burma*, p. 63.

arily founded by salary earners in a given government department or large business house, and many appear to have operated with success.

There were a few co-operative consumers' societies, but they were of very minor importance.

The Ba Maw government appears to have used co-operative societies in its scheme of rationing, etc., for there were complaints that in areas where no co-operative consumers societies had been set up it was impossible to secure necessities of life at rationed prices. There were reportedly seven such shops in Rangoon by the fall of 1943, and an unknown number in district towns. The Rangoon Central Co-operative Trading Society appears to have been a fairly large and active institution.

FUTURE OF CO-OPERATION IN BURMA

Although certain aspects of the medieval Burmese rural life, as practiced early in the last century, involved co-operative effort, the money factor and monetary calculations did not play an important part. Hence the present generation of Burmans takes a highly individualistic view of economic matters. Moreover, members of co-operative committees, at least in the earlier period of the movement, did not show a very high standard of probity, or of resistance to pressure from relatives and friends for the granting of unduly large loans or postponement of payment.

These and other drawbacks are recognized by all students of the problem, and yet few can be found to advocate the abandonment of efforts to make co-operation a success in Burma. It seems impossible to devise any other means of lending to cultivators the small sums, repayable at harvest, which are required by them for the plowing and planting seasons. Should ordinary banking facilities be used, the administration charges are bound to be prohibitive.³ Moreover, the hope has not died that a

senior official has suggested a system of small state-operated *sed* on the *Afdeeling* banks of Indonesia. This scheme might use a committee of considerable wisdom and probity. It would thus have the features of a co-operative credit system.

properly functioning co-operative society may help inculcate thrift—a quality not ordinarily encountered among Burmans.

The most hopeful type of society appears to be that which combines marketing with credit. The officially sponsored rice mills which processed a fair proportion of the paddy from the Sittang colonies are an example. The late Reverend B. C. Case of the American Baptist Mission Agricultural School, Pyinmana, sponsored a rather large and successful society which combined agricultural credit with the marketing of eggs. In each case, the essential point is that necessary payments to the society are deducted from the proceeds before the member receives payment. There is no reason why such societies should not greatly increase in number and in efficiency. They are most likely to be successful if they are part of a well-conceived scheme for the solution of problems of tenancy, land alienation, and long-term credit.

VII

FORESTRY

GENERAL SURVEY

FORESTS,¹ according to one authority, cover 145,300 square miles, or 56 percent of the total area of Burma. In addition, the typical Burmese village is invisible from a short distance because of the heavy growth of surrounding bamboos, trees, and vines, while small groups of trees are to be found among rice fields and farms throughout the country.

Morehead² classifies the chief types of forest as follows:

Tidal forests, along the Arakan and Tenasserim coasts, and on some islands of the Mergui Archipelago. Mangroves provide the chief economic product, being useful for fuel and tanning material.

Beach and dune forests above the high-tide limits of the Arakan and Tenasserim coasts, providing a few unimportant deciduous varieties.

Swamp forests, in many parts of the country, the most well-known timber being *yon*, useful for tool handles.

Tropical evergreen forests cover much larger areas, particularly where rainfall is over 120 inches, and sometimes where rainfall is as little as 60 inches per annum. Bamboos are plentiful, as are vines of all kinds. Some less-known species are found in these forests, including *kanyin*, *thingan*, and *pyinma*.

¹ F. T. Morehead's excellent pamphlet *The Forests of Burma*, (Longmans, Green & Co., 1944), has been drawn on heavily throughout this chapter. Most statistics are from the report on the Forest Administration in Burma for the year ending March 31, 1940.

² Drawing upon Troup's *Silviculture of Indian Trees*.

Mixed deciduous forests ordinarily where the rainfall is 40 to 120 inches. Subdivided into:

- a) *Moist upper mixed deciduous forests*, with numerous bamboos and the best teak, as well as *pyinkado*. This type is found in Lower Burma and in the Upper Burma wet belt, north of the Dry Zone. It includes forests in Arakan where bamboo is gradually destroying other types of forest growth.
- b) *Dry upper mixed deciduous forests*, with a different type of bamboo predominant, covering extensive areas in Upper Burma, where rainfall is lower than for the type just described. Teak, *pyinkado*, *taukkyan*, *ingyin*, and *padauk* are the chief types of valuable timber.
- c) *Lower mixed deciduous forests* occur on low ground, including that which is clayey or alluvial. It contains approximately the same timbers as the previously described types of forest.

Dry forests occur where rainfall is below 50 inches, and consist of

- a) *Thandahat* forests, occurring on the edge of the Dry Zone. Their economic usefulness is provided largely by the *sha* or *acacia catechu*, a source of cutch or tanning material, and by several species which are good for tool handles, cart wheels, and plow bodies.
- b) *Indaing* forests, found below 2,500 feet, on sandy, laterite, or gravelly soil. The trees are of the *dipterocarpus* family, and yield good structural timber.

Subtropical and Temperate forests occur at altitudes over 3,000 feet, with pines, oaks, chestnuts, ferns, etc.

The more valuable and accessible forests have been reserved by the government, for systematic exploitation by lessees, contractors, or by the Forest Department, under controls which aim at preserving them as a permanent national asset. The teak forests are those which have a fair sprinkling of teak trees, up to about 12 percent of the total tree growth. Most areas with particularly valuable timber have by now been reserved, and some of the unclassed (i.e., unreserved) forests are expected to be cut down to make place for agriculture with the

increase of population. The forests of Burma in 1940 were divided as follows:

BURMA FORESTS, 1940

	Square Miles	
	Reserved Forests	Unclassed Forests
Merchantable (teak only)	12,826	17,701
Merchantable (other species) . .	12,323	36,084
Unprofitable or inaccessible . . .	6,488	40,870
	<hr/> 31,637*	<hr/> 94,655†

* Morehead gives the figure as 34,799 square miles.

† Morehead's figure is 110,529 square miles.

About 90 percent of the reserved forests are in Burma proper, and 10 percent in the Federated Shan States. The opening up of new roads in the north and northwest, as a result of the war with Japan, may make feasible the exploitation of large additional forest areas.

Since the greater part of the world's teak is to be found in Burma, it is of interest to note that this commodity has been of commercial importance at least since the sixth century A.D., and the Arabs, who were important mariners in Eastern waters from the eighth century, may have used ships made of Burma teak along with the teak of western India. By the seventeenth century, Burma had an indigenous shipbuilding industry, and in the following century ships were built at Rangoon and Syriam along Western lines, under the guidance of British, French, and Armenian shipwrights. Morehead mentions the convict ship *Success*, reputedly built of Burma teak in 1700, which crossed the Atlantic under its own sail as late as 1912.

Teak was declared a "royal tree" by the Burmese king in 1752, and in 1855 Lord Lallhousie, the Governor-General, laid down a decree which likewise made teak trees state property.³ A forest department was set up in 1856, and scientific working of the forests has characterized the Burmese timber industry from that date. The destruction of the Moulmein teak resources by wasteful exploitation soon after the annexation of

³ Perhaps half the teak of Burma was in Lower Burma, which was British after 1853. Upper Burma was added to India in 1886.

Tenasserim in 1826 probably contributed to the adoption of this strict policy of conservation. In 1894 the Government of India enunciated a forest policy for India and Burma. The forests were divided into: (1) *protection forests*, where climatic or physical reasons demanded production; (2) *commercial forests*, for orderly exploitation; (3) *local supply forests*, to provide bamboo, firewood, etc., for the local inhabitants; and (4) *pasture lands*.

THE BURMA FOREST DEPARTMENT

Since 1923 the administration of forests has been under the control of a Minister of Forests, invariably a Burman. The Burma Forest Department is the oldest of its kind in the British Empire, and was administered by a Chief Conservator of Forests, responsible to the Minister of Forests through the Forest Secretary. The personnel of the Burma Forest Department was classified as follows in 1940 and 1941:

BURMA FOREST DEPARTMENT PERSONNEL

	1940 (Actual)	1941 (Sanctioned)
Burma Forest Service		
Class I	77	80
Class II	77	71
Rangers	133	144
Deputy Rangers	353	377
Probationary Deputy	20	
Foresters	1,376	1,464
	<hr/> 2,036	<hr/> 2,136

The staff had been retrenched severely during the world-wide depression, and was subsequently considered inadequate for the large responsibilities placed upon it. Most of the Class I members of the staff were European, as the qualification was a degree in forestry from a recognized British university. However, new recruitment just before the Japanese invasion was principally from Burmans with British training. A forestry degree from Rangoon University, or its equivalent, was a prerequisite to service in Class II. The Rangoon University course was discontinued in 1935. The well-equipped Forest

School at Pyinmana gave a two-year course for Rangers and Deputy Rangers. In addition to the personnel noted above, there was a larger "menial and elephant establishment" recruited on the spot, the latter largely from Karens.

For purposes of administration Burma's forests were divided into 34 forest divisions, three of them in the Shan States. There were, in addition, two nonterritorial divisions. These divisions were in charge of Divisional Forest Officers, with the rank of Deputy Conservators. The 31 divisions in Burma proper were combined into five territorial circles, each under a Conservator of Forests. There were two other officials with the rank of Conservators, one each in charge of Working Plans and Utilization. The three divisions in the Shan States were in charge of a Principal Forest Officer. The specialist posts were those of Forest Economist, Forest Entomologist, Silviculturist, and Game Warden. Departmental Extraction (in the Myitmaka Extraction Division) and Sales were branches of the Utilization Circle, each under a Deputy Conservator. All these specialist posts were held by Deputy Conservators.

Experiments in artificial regeneration of teak led in 1935 to an official decision, that

Government consider that planting on the long rotation necessary to produce teak timber of a size and specification suitable for export is too speculative a policy to be justifiable on any grounds and that it certainly cannot be justified on economic grounds. Planting, or any other form of production for export trade must be regarded solely as a business undertaking and the assurance of a profit is essential. In view of the long term investment involved, of the risk of damage by natural enemies attendant on the planting of large areas of pure forest, especially with a species such as teak which in a natural state grows in a mixed crop and of the increasing menace by substitutes, it is considered that this desideratum cannot be fulfilled. It follows, therefore, that the policy of planting teak for export should be abandoned and Government have decided that the work of forming such plantations shall be closed down gradually.⁴

⁴ *Report on Forest Administration in Burma for the year ending March 31, 1940*, p. 20.

The 1935 decision did not entirely dispose of the question of regeneration, however. In 1940 there were 69,548 acres under "natural regeneration" and 138,688 acres under "artificial regeneration." The distinction is that planting is required for the latter, but "regeneration fellings" are used for the former. At the time of the Japanese invasion it appeared likely that artificial regeneration of species other than teak for village supply might be sanctioned for the more densely populated areas. The "jungle" or forest is highly important in the economy of the typical Burmese family, for such areas are scattered widely throughout the country and supply near-by villagers with firewood, all material for most houses, many herbs, berries, fruits, and roots, including bamboo shoots for culinary purposes, together with the invaluable bamboo which has a multitude of uses.

The Forest Department not only carries on educational work at Pyinmana and elsewhere, but also answers inquiries from foreign prospective purchasers of Burma timber. In 1941 a Forest Propaganda Officer was appointed to tour rural areas, stage departmental exhibits, give lectures on special subjects, and otherwise educate the rural population of Burma with a view to securing optimum preservation and utilization of Burma's great forest wealth. It should be noted that whereas teak is the only economic product of the Burma forests of great importance for foreign trade, a large variety of other forest products play an extremely important part in Burma's rural economy. Moreover, although there are great areas in Lower Burma where paddy predominates, most villages are only a short distance from hills, swamps, or other uncultivated areas which might be loosely classified as "forests."

The Forest Department also "trained" certain streams useful for extraction of timber, and kept up thousands of miles of cart roads and a few miles of metaled roads, for the same purpose.

The Forest Department was a very important part of the revenue system of the country. Financial operations since 1925 have been officially summarized as shown in Table 14.

TABLE 14
FINANCIAL OPERATIONS OF THE BURMA FOREST DEPARTMENT

Period	Receipts (in rupees*)	Expenditure (in rupees)	Net Revenue (in rupees)	Percentage of Net Revenue to Gross Receipts
Average 1925-26 through 1927-28	21,171,390	9,031,983	12,139,407	57.34%
Average 1928-29 through 1930-31	16,340,873	7,814,612	8,526,261	52.10%
Average 1931-32 through 1933-34	9,129,849	6,309,857	2,819,992	31.00%
Average 1934-35 through 1936-37	13,005,996	5,843,578	7,162,418	55.07%
Average 1937-38 through 1939-40	14,900,910	6,156,926	8,743,984	58.68%

* One dollar equaled about Rs. 2.70 in this period.

In addition, the forest receipts in the Federated Shan States were roughly 8 percent of the receipts in Burma proper.

TEAKWOOD

Teak (*Tectona grandis*) is not quite a Burmese monopoly, but about 75 percent of the world's teak in recent years has come from Burma, nearly all the remainder originating in India, Siam, Indo-China and Java. The trees when fully mature have heights of 100 to 150 feet, girths of 6 to 12 feet at breast height, and leaves from one to two feet in length. Teak is unusually strong, durable, straight-grained, and resistant to fungus and termites. It contains a wood tar which helps prevent rusting of the iron with which it comes in contact when used as decking for ships. According to Morehead:

A comparison of teak with ten of the chief timbers of Europe and America (pine, spruce, larch, Douglas fir, oak, ash, elm, beech, hickory and walnut) shows:

1. Shrinkage in all cases is at least 40 percent more than that of teak, while the average shrinkage of all ten timbers is almost double that of teak.

2. None is as strong for beams, posts and struts; they average about three quarters the strength of teak.
3. Only in shock resistance is teak surpassed by ash and hickory.
4. Oak and beech are as heavy as teak and hickory is slightly heavier.⁵

Probably the outstanding use of teak continues to be ship-building, but it has proved eminently suitable for railway carriages, ties, etc., as well as for housing, paneling, furniture, and other uses.

The highest outturn of teak was in the quinquennium 1919-24 when it averaged 509,935 tons. In the next five years output averaged 486,439 tons. In 1934-39 the average was 467,836 and experts believe that an annual output of over 400,000 tons can be maintained indefinitely, given reasonable provision for conservation and scientific forestry. In 1939-40 there were 228,752 teak trees girdled in Burma proper, against 17,869 in the Shan States and an estimated 12,000 in Karenni.

The following description of the teak industry of the Shan States (differing little from that of Burma proper) is reproduced with permission from the *Foreign Commerce Weekly*:

The teak industry was necessarily in the hands of a few large companies, mainly British and Indian, since large capital is required for extraction, milling and marketing and the investment is a long-term one—the more so as it takes a log an average of 4 years to reach the mill. Green teak logs will not float—and floating is the only practicable means of transport from the remote and hilly forests to the mills, hundreds of miles away. The trees are first killed by girdling (i.e., they are ringed to the heartwood) and left standing for 3 years while the timber dries.

The Forest Department had its working plans providing for scientific and permanent use of the forests, to prevent over-exploitation and the felling of immature trees. The teak forests of this area are natural mixed forests where teak occurs only to the extent of about 10 percent of the crop. Units of management are selected

⁵ For a statistical statement as to specific gravity, static bending, impact bending, hardness, shear, tension, and other technical details, see report of the Dehra Dun Forest Research Institute. A summary is given in Alexander Rodger's *Handbook of Forest Products of Burma, 1935* (Reprinted, 1943), pp. 147-49.

and each unit is worked over on a 30-year cycle—that is, one-thirtieth of the area is worked annually. The size of a marketable tree varies from a minimum of 6-foot girth to 7 feet 6 inches, which corresponds to an age of about 150 years.

After a tree has stood girdled for 3 years, it is felled and logged, and, except in very easy and accessible country where carts or buffaloes may be used, the logs are dragged by elephants to streams that can float them out to the Salween. To reach a floatable stream usually involves a drag of several miles. Once placed in a stream (which is dry most of the year), the logs must wait for a floating rise. This may occur several times during the monsoon (June to October), but there are many areas where rainfall is capricious and logs wait 3 to 5 years. During this time they must be fire-protected on account of the dryness of the timber, the amount of leaf-fall and debris that collects, and the fact that forest fires are an annual occurrence almost throughout the country.

Even when floating rises occur, all logs rarely reach the river, for frequent "jams" pile up hundreds of logs in bends, and other logs are stranded when the stream falls rapidly. To deal with jams and stranded logs a team of elephants works along the stream, performing the specialized task of "aunging." The elephant is therefore an indispensable and invaluable adjunct to the teak industry. Herds are kept up to strength either by capture of wild elephants or from calves born in captivity—domestic herds breed quite freely. The value of an elephant capable of normal work is about Rs. 4,000 (\$1,300).

Work in the forests is concentrated in the monsoon and "cold" seasons (June to mid-February). The hot weather of the remainder of the year is unsuitable for elephant work. Apart from the fact that elephants require a long annual rest, food and water becomes scarce, and they must be moved to selected rest camps where fodder and water are available. A working herd of elephants is not fed by hand but is turned loose to graze. They consume vast quantities of vegetation (bamboos, creepers, and other growing things) and destroy probably even more than they eat. Fodder potentialities limit the size of working herds (as does the floating capacity of streams), and hot weather dries up the vegetation in many forest areas, particularly those where elephants have recently grazed.

After reaching the Salween the logs have a 400- or 500 mile journey to Moulmein, and nothing is or can be done to regulate their passage till they have passed the Hatgyi Rapids, when they are caught and moved to the mills in small rafts. The uncontrolled passage of the Salween may take from two months to several years,

and many logs never arrive at all. It is not an unusual sight to see logs balanced in the crowns of trees, after an exceptional rise, and in a position where the river may not dislodge them for many years.

It has been remarked that the teak occurs in natural forests, being only about 10 percent of the crop. No artificial planting takes place in the Shan States as natural regeneration by seed has proved sufficient. To assist young teak trees to establish themselves the Forest Department carried out "improvement fellings" by removing less valuable trees and those that interfered with teak. Young teak has great difficulty in establishing itself, owing partly to annual fires and partly to competition from other species.

Many species of trees with good wood are found in these forests, but since they will not float, even when killed, they are valueless except in the more accessible parts of Burma where extraction by cart is possible to the main roads and railways, or where absence of rapids permits rafting them down the streams with bamboos and light woods.

In the Shan States, as in other parts of Burma, there are no "forest fires" of the type common in the western United States. Hill people, with their primitive type of cultivation, purposely burn off hillsides for *taungya* cultivation, and the slow creeping fires, thus started, may continue and cover a wide area, since little has ever been done to stop their spread except the setting of back-fires.⁶

Working plans in 1940 covered 29,054 square miles, or 83.5 percent of the total area of reserved forests. Most of the timber was handled by the leading private companies, but selected teak logs were sent by government agency directly to the British Admiralty, while the Government Timber Depot at Rangoon auctioned about 35,000 tons of logs annually.

The Bombay Burmah Trading Corporation, the dispute of which with the Burmese king was the final link in a chain of causes leading to the third and final Anglo-Burmese War (1885), remains the largest teak firm. Between 1935 and 1940, it handled an average of 185,275 tons annually and paid an average annual royalty of Rs. 3,479,650. Messrs. Steel Brothers and Messrs. MacGregor & Co., averaged about a third

⁶ J. R. Andrus, in *Foreign Commerce Weekly*, September 4, 1943.

as much tonnage and over a third as much royalty as the Bombay Burmah Corporation. Messrs. Foucar & Co. and T. D. Findlay and Son were the other European contractors. There were a number of very small Burmese firms, and an Indo-Burmese firm, U Bah Oh and Company, of somewhat smaller size than any of the European extractors. The "long-term lessees" consisted of the five European firms and U Bah Oh. The only authoritative estimate of capital investment by the five leading firms was that of 1924, when their leases were last renewed. They were then found to have invested about Rs. 100,000,000 in Burma, and to have provided employment for about 55,000 (including employees of contractors). Statistics for 1939-40 are as shown in Table 15.

TABLE 15
TIMBER PRODUCTION IN BURMA, 1939-40
(In tons of 50 cubic feet)

Agency	Teak	Other Timbers	Firewood	Timber Burnt for Charcoal
Government	43,107	7,805	22,390	37,122
Lessees (long-term)	307,997	41,182	16	.....
Contractors and licensees	49,055	385,271	820,826	356,057
Total.....	400,159	434,258	843,232	393,179

There were about 140 mills in the entire country capable of handling 800,000 tons of round logs annually. About 16 or 17 of these mills were at Rangoon, and an equal number at each of the other two chief milling centers—Mandalay and Moulmein. The Rangoon mills were estimated to have a monthly capacity of 20,000 to 25,000 tons.

OTHER HARDWOODS

Teak was the only export of any importance, only about tons of other hardwoods being exported annually, lia for building timber and railway sleepers (ties). r chief hardwoods, used almost exclusively within

Burma, together with average annual production, 1935-40, were as follows:

Burmese Name	Botanical Name	Production (cubic tons)
Pyinkado	<i>Nydia dolabriformis</i>	114,448
In-Kanyin	<i>Dipterocarpus species</i>	175,973
Padauk	<i>Pterocarpus macrocarpus</i>	6,080
Thitya-Ingyin	<i>Shorea obtusa pentacme suavis</i>	22,467
Pyinma	<i>Lagerstroemia flosreginae</i>	7,136
Other timbers		156,259
		<hr/> 482,363

Several of the timbers just mentioned have unusually valuable qualities, and efforts have been made to popularize them in the world market, although hitherto with little success. *Pyinkado*, called "Burmese ironwood," is so hard that it is necessary to bore holes in it before driving in nails. *Padauk* is a particularly strong and durable timber, and often is very beautiful for paneling. Both these woods make excellent railway ties. *Taungthayet* (*Swintonia florabunda*) makes reasonably good box shooks, while *yon* (*Anogeissus acuminata*) is excellent for tool handles.

MINOR FOREST PRODUCTS

Mention has already been made of the uses to which bamboo has been put. It provides housing, almost all household and farm utensils, in part or in whole; weapons, furniture, parts of clothing, baskets, bridges, material for surfacing roads, for making rafts, and (in mountain areas) for water conduits, besides furnishing tender shoots and sprouts for use as food. In 1944 it even provided the "pipe" for a short stretch of the India-China oil pipe line. Moreover, W. Raitt of the Forest Research Institute, Dehra Dun, estimated in 1929 that Burma's forests could yield 787,000 tons of paper pulp per annum.⁷ There has as yet been no exploitation of bamboo for this purpose, however.

Firewood is of course an important item in the Burmese

⁷ See his *Digestion of Grasses and Bamboos for Paper Making*, London, Crosby Lockwood and Son.

economy, more particularly in the hilly areas where it is needed for heat at times. Moreover, it is used extensively in steamers, on some minor railway lines, in some mills, and a few small electric-power stations. Charcoal is the chief fuel for cooking, at least in urban areas.

The following tabulation gives some idea of the importance of the minor forest products, except that with bamboos growing in profusion in most parts of the country, and in almost all villages, no statistical estimate of their importance can be of much value.

ROYALTY VALUE OF MINOR FOREST PRODUCTS IN RUPEES

Species	1938-39	1939-40
Bamboos	273,484	282,741
Canes	21,990	22,000
Lac	22,405	20,656
Cutch	138,308	106,790
Thitsi	3,281	2,827
Barks	21,049	36,437
Miscellaneous	50,995	44,998
Total	531,602	522,449

There are sufficient canes in Burma to permit the development of a chair and basket industry equal to that of Malaya. Past development has not been great, however.

Lac is a resinous substance secreted by the lac insect (*Tachardia lacca*, or *laccifer lacca*) on several varieties of Burma trees. It is used for phonograph records, sealing wax, varnishes, etc. The Federated Shan States produced considerable quantities. Exports to India have been as high as 5,000 tons annually.

Burma cutch comes from boiling the chopped heartwood of the *acacia catechu*, a deciduous tree confined to parts of India, Burma, and Siam. I. H. Burkill, in his *Dictionary of the Economic Products of the Malay Peninsula*, states:

Cutch consists of catechin and catechu-tannic acid; the palest samples contain the most catechin and are those for chewing; the darkest are those for dyeing.

There are about 3,500 long tons annually. It is used in the manufacture of the cutch of Siam and Malaya, made from

Thitsi, according to Burkill, is "*melanorrhoea usitata*" found from Manipur to Tenasserim, and a source of Burmese lacquer, which is obtained from V-shaped cuts in the bark. It is also used as a varnish and as a cement for holding the glass of Burmese mosaics.

A new forest product was introduced in 1935—tung oil, useful for quick-drying paints and varnishes. By 1942 it was estimated that the Shan States outside Kengtung contained ten to twelve thousand acres of tung plantations, and the area in Kengtung is thought to have been large also. Sir Arthur Bruce, head of the largest timber company and of the Burma Chamber of Commerce, stated in February 1947 that the tung-oil estates were reported to have been badly damaged by fire.

Interesting minor products are bat's guano and edible birds' nests.

FOREST FAUNA

The Forest Department controlled 758 square miles of game sanctuaries, but wild elephants, tigers, leopards, bears, deer, *sain*g (type of wild cow), wild pigs, rhinoceroses, and a great many kinds of birds and snakes make nearly all Burmese forests interesting, and sometimes dangerous, to the hunter and traveler. Special pains were taken by the Forest Department to preserve the rhinoceros and the thamin (brow-antlered deer) which were in danger of becoming extinct in Burma. The official report of the department for 1939–40 described elephant control as follows:

Nineteen game rangers were employed either whole or part time during the year. Work consisted of crop protection and extermination in accordance with the elephant control scheme. During the year 581 elephants were killed by game rangers, 11 by sportsmen, 7 by timber lessees in defense of their herds, 15 were killed in defense of life and property, 1 was killed in a kheddah drive, 6 died in conflict, 6 were found dead and 2 were killed by tigers, making a total of 629 elephants destroyed during the year.

Two hundred and fifteen elephants were caught in kheddahs operated in conjunction with the elephant control scheme.

The elephant control measures adopted in 1936 have produced good results and should prove of lasting value. Further extensive

operations should not be necessary. During the period 1935-36 to 1939-40, 2,131 elephants have been destroyed by game rangers, 277 by other agencies and 911 have been captured in kheddahs.

Male elephants sometimes suffer tusk or other injuries which cause them to leave the herd and run amuck. In some few cases, it appears that during the *musth* period (which is transitory) a weaker male may be ejected from the herd, and become a "rogue" as a consequence. Under such circumstances it is desirable that he be killed as soon as possible. From the foregoing statistics it is evident that professional rangers are far more important than sportsmen in tracking down and destroying dangerous elephants. The story is told of an American lecturer at Judson College, University of Rangoon, around the beginning of the twentieth century, who enjoyed elephant hunting much more than teaching philosophy. He would leave in the midst of a class period on receipt of a telegram giving the approximate location of a "rogue" elephant, to be gone for days. His college passed a rule that, in the future, absence from Rangoon was permissible only by arrangement with the principal!

Tame elephants were estimated at 6,000 and wild elephants at 5,000, at the time of the Japanese invasion.

FOREIGN TRADE

India was the chief customer for Burma teak and other woods. Official figures for teak exports in the calendar year 1940 were as follows:

BURMA EXPORTS OF TEAK

	Tons	Rupiahs
India	174,140	20,350,472
United Kingdom	33,000	6,888,061
United States	2,981	1,247,664
Union of South Africa	5,550	1,116,337
Ceylon	4,444	553,309
Portuguese East Africa	764	121,206
Straits Settlements	799	119,081
Mauritius	725	100,377
Other countries	2,891	527,794
	225,294	31,024,301
		(\$9,307,290)

lengthy process between girdling and export, the Japanese inherited much useful work from the previous regime, including an estimated 800,000 girdled trees with about two tons of lumber each, and 1,200,000 logs, of which 350,000 were already at the Rangoon depots. The Nippon-Burma Timber Union was set up to take the place of the five large British firms, and it secured the services of a senior Burmese employee of Steel Brothers. It is obvious that exports of teak were never important during the Japanese occupation, but shipbuilding, with teak, is a flourishing industry. Mitsui, Mitsubishi Ataka, and Menka participated in the Nippon-Burma Timber Union.

This company reportedly impressed large numbers of young men for work in the forests around Bhamo in the summer of 1943. They cut down trees near roads, regardless of age or the future of the forests, and without bothering to girdle. In some areas a little girdling was done, but by and large the exigencies of war prevented much use being made of a great deal of Burma's timber resources. Packing cases and trench girders were the chief uses for timber. Burmese forest officers are reported to have done their best to prevent wasteful exploitation.

THE POSTWAR TIMBER PROJECT BOARD

The reconstruction of Burma's teak production and export was turned over by the British, on their return, to a Timber Project Board with four official members and four nonofficials, two of the latter being Burmans. The other two were "appointed for their commercial experience and are not representative of any particular interests. The European teak firms have no direct say in the administration of the Board's affairs."

It is obvious that constant Burmese criticism of the Timber Project Board (and some of the other Boards) prompted the official defense and attempt to minimize the part played by the five large British firms. The communique proceeds:

The Teak Consortium, consisting of five European teak firms, are under agreement with the Government of Burma whereby Government provides the greater part of the finance for operations.

Owing to the uncertainty of their long term lease position, these firms are unwilling to resume operations entirely with their own finance and Government entered into the present agreement with the object of ensuring that the import part of the teak industry that was under the control of these firms was developed properly during the interim period and until the long term lease position was clarified. It is important to appreciate that the long term lease position of the five European teak firms is in no way affected by the agreement—the present Government have entered into no further commitments in regard to these leases and it will be for the eventual Government that is set up in Burma to conduct negotiations.⁵

The remainder of the communique stresses repeatedly the absence of any government intention to favor the British firms at the expense of the Burmese. In view of the almost complete absence of non-British enterprise in the timber industry before the war, the outsider might wonder why it was necessary to apologize, in effect, for the temporary continuance of that condition during the rehabilitation period. During the first year and a half after the recapture of Rangoon the teak industry had not recovered more than half of its milling capacity, and the local demand absorbed most of the output, leaving little for export. No official figures for teak production are as yet available, but an officially inspired article in the *New Times of Burma*, March 30, 1947, reports the theft of 40,000 long tons of teak during 1946 and the sale of 1,201 tons by the Government Timber Depot, Rangoon, during January 1947. The average price was Rs. 255 per ton. Most of the teak was presumably sold by the commercial firms.

According to an official source⁶ the two leading firms use tractors in extracting teak in certain areas. Presumably the shortage of elephants and the presence of tractors as military surplus make such a change profitable.

⁵ Communique from a government press conference, cited in *The Burman*, May 10, 1946.

⁶ *Survey of Departmental Activities*, January 1947. The March issue states that: "Both in Upper Burma and Lower Burma, supply of timber exceeds the demand." A lower price would probably attract additional buyers in America, as well as in India and other countries.

FUTURE PROSPECTS

Although a large portion of the sawmilling capacity of Burma was destroyed during the war, there is no evidence that any permanent damage was done to the forests themselves. In fact, total extraction of teak was almost certainly much less than normal. The capacity of Burma to export teak in the future appears undiminished, provided demand is sufficient to stimulate the rebuilding of the mills.

The colossal shipbuilding activities of the United States and Great Britain during the war were necessarily carried on without teak—for nearly all the world's supply of the wood was in Japanese hands. This does not indicate, however, that shipbuilders of the future will not return to the use of teak when it is again available at a competitive price. Moreover, India's large program for railway development will open up a large demand for Burma teak, as India has always been one of the world's leading consumers of that wood. Should Chinese plans for railway development materialize, another vast market will be opened up, and even if China buys teak from Indo-China and Siam, the result will be a lessening of competition in the European market. There may possibly be a substantial increase in the export of pyinkado, padauk, and other hardwoods which have excellent qualities but are unknown outside India and Burma.

It may be several years, however, before Burma's buildings, bridges, railways, etc., are sufficiently repaired to permit the major portion of the country's timber production to be exported. It is fortunate, on the other hand, that Burma was exporting a few hundred tons per month by early 1947, and re-establishing trade contacts in various countries to preserve the foreign market against the time when an increase in production and a decrease in local demand would leave a large surplus available for export.

VIII MINERALS

GENERAL SURVEY

ALTHOUGH Burma has never produced iron or coal on a commercial scale, it is an important source of so many other mineral products that it must be ranked among the more richly endowed small nations of the world. Burma stood first in the Eastern Hemisphere part of the British Empire in production of petroleum, sixth in the world in lead, second to China in tungsten, and probably fifth among world producers of tin. Annual production of the leading minerals during the period immediately preceding World War II was officially reported to be as in Table 16.

TABLE 16
MINERAL PRODUCTION IN BURMA
(*In long tons*)

Product	1936	1937	1938	1939
Petroleum			264*	276*
Lead	73,155	77,668	80,101	77,180
Zinc concentrates	76,807	73,552	60,744	59,500
Tin concentrates†	7,352	7,472	7,100	8,536
Tungsten concentrates†	6,896	7,276	7,673	8,882
Antimonial lead†	1,240	1,150	1,200	1,180
Nickel speiss	4,325	4,020	3,015	2,896
Cobalt	303	281	211	203

* Millions of imperial gallons.

† Figures for tin and tungsten concentrates, as well as antimonial lead, were not given in condensed form by the *Annual Report on Mineral Production in Burma*, but have been deduced by the writer from statistics in that report.

In spite of Burma's rich natural endowment of minerals, the country did not contain important industries based on those minerals, except, of course, for the petroleum refining industry. Other minerals were invariably exported in the raw or semi-finished state, and there seems no early prospect of a change in

that respect. Practically all the other minerals are not used singly, in the finished product, but in connection with steel and a number of other products not likely to be produced in Burma on a competitive scale. Moreover, with the exception of petroleum, which was produced in central Burma, most of the country's mineral production comes from two world-famous mines, both situated in the Shan States, not in Burma proper.

PETROLEUM

Burma's petroleum production, while it ranked high among British Empire countries, was a very small part—about half of one percent—of world production. It was used almost exclusively in Burma and India, except for paraffin, which was sent chiefly to Europe.

Since India produces but a very small proportion of its normal oil requirements, Burma is particularly well located for the supply of that country, especially eastern and southern India.

The Burmans commenced using the petroleum of their Dry Zone many generations ago, particularly that around what they came to call "Yenangyaung" or "stream of ill-smelling water." Hand-dug wells antedated modern methods of exploitation, and continue to provide a small output. In fact, the Burmah Oil Company, organized in 1886, started by purchasing oil from the *dweinsas* or local proprietors of hand-dug wells, to be refined in the company's plant. This company, incidentally, was the parent of the Anglo-Iranian Oil Company. American drillers were employed in 1904, and even at the time of Japanese occupation were still an important part of the operating personnel in spite of the tendency to employ young Scots for training under experienced Americans. Attempts were made to train Burmans for the highly skilled job of drilling.

The Yenangyaung field reached its peak production in 1921, when the output was 184,420,141 imperial gallons. For a number of years the Chauk field, a few miles to the north, on the left bank of the Irrawaddy, has taken first place, although its maximum—157,295,630 imperial gallons in 1940, was still short of the highest mark of the older field. Production in im-

perial gallons in the last three full years for which statistics are available, was officially reported as shown in Table 17.

TABLE 17
PRODUCTION OF BURMA OIL FIELDS
(Thousands of imperial gallons)

District	1938	1939	1940
Kyaukpyu	11	11	11
Magwe:			
Yenangyaung drilled wells	112,186	106,089	102,150*
Hand-dug wells	832	826†
Chauk drilled wells	120,770	139,792	157,296
Minbu	2,930	2,818	2,895
Thayetmyo	2,713	1,997	2,622
Indaw	2,359	2,014	1,782
Pakokku:*			
Drilled wells	21,959	22,072	4,671‡
Hand-dug wells	63	55§
Totals.....	263,823	275,673	270,827

* After 1939 it is thought that the small total for Yenangyaung hand dug-wells was combined with that for drilled wells.

† Mostly from Yenangyat.

‡ In 1940 (and the first nine months of 1941, for which statistics are also available) there was a drastic and unexplained drop in the official figure for production in Pakokku. It is thought that most of the Yenangyat production was included with that of Chauk, across the river, as it went there for transport through the pipe line or by barge.

§ Presumably included with total for drilled wells.

Kyaukpyu is an island off the Arakan coast, southeast of Akyab. Minbu District is on the west bank of the Irrawaddy, below Pakokku and opposite Magwe District. Thayetmyo is south of Minbu. Indaw is in the rather remote Upper Chindwin District—having been one of the first towns occupied by the British Fourteenth Army in its late 1944 drive into Burma.

In 1908 a 275-mile pipe line (later extended to 325 miles) was laid between the oil fields and Syriam, across the Pegu River from Rangoon. This line is 10 inches in inside diameter, and is visible at many places alongside the Prome-Rangoon railway and highway.

It is believed that with 75 percent of the production (85 percent of the refining) in the hands of one company, exploitation of Burma's oil fields has not been on a destructive scale, and that the prewar production of over 250,000,000 imperial

gallons can be maintained for many years. The second most important petroleum producer was the Indo-Burma Petroleum Company connected with Steel Brothers. It produced $12\frac{1}{2}$ percent of the total, against about $9\frac{1}{2}$ percent for the British Burmah Petroleum Company, and 3 percent for the Nath Singh Oil Company and miscellaneous other companies.

The Thittabwe Power Station of the Burmah Oil Company was the outstanding feature of the oil fields, prior to its thorough demolition by retreating British forces in 1942. It produced 11,500 kilowatts of power, furnishing electricity to all the major fields as well as the towns in that area. Near by was a plant for taking the "casing head gasoline" from the abundant natural gas of the oil fields. The natural gas was then used as fuel in the power plant. The gasoline was sold locally at the Rangoon price plus transport from Rangoon, the remainder being mixed with crude oil and sent by pipe to Syriam. Chauk had a smaller topping plant.

The pipe line was owned by the Burmah Oil Company, but smaller competitors were permitted to use it to send part of their production to Lower Burma. However, the Indo-Burma Petroleum Company and the British Burmah Petroleum Company transported most of the petroleum sent to their Seikkyi and Thilawa refineries by barges via the Irrawaddy River, the Twante Canal, and the Rangoon River. There were seven pumping stations along the pipe line; one was operated by electricity, the others by Diesels or steam.

The Burmah Oil Company plant at Syriam had a capacity of 800,000 imperial gallons daily. This refinery was well staffed with capable Scottish engineers, and could produce aviation gasoline as well as less highly refined products. It had storage capacity for 90,000 tons of benzine and kerosene, 131,000 tons of oil, and 54,000 tons of other oils. The adjoining power plant had a capacity of 3,600 kilowatts, and was connected with the lines of the near-by Rangoon Electric Tramway and Supply Company.

The Indo-Burma Petroleum Company's Seikkyi plant was situated a few miles below Syriam, on the Rangoon River. This

plant had a capacity of 120,000 imperial gallons daily, but it is doubtful if it operated as close to capacity as did its larger rival. The Seikkyi location had storage capacity for 23,000 long tons of benzine and kerosene, the same quantity of crude oil, and 4,000 tons of other oils. The plant and storage capacity of the British Burmah Petroleum Company, at Thilawa, a short distance below Seikkyi, were about two-thirds those of the I.B.P.

The other refineries were the small plant of the Nath Singl Oil Company, near Yenangyaung, and a not very modern plant at Yethaya, seven and a half miles below Minbu on the west bank of the river. The Yethaya plant—perhaps the least efficient of the lot—appears to have been used by the Japanese more persistently than any of the others.

The Syriam, Seikkyi, and Thilawa plants were all in a position to load directly by pipe onto ocean-going tankers, of which the B.O.C. owned several. That company brought petroleum, kerosene, etc., by barge from Syriam to Rangoon, for "packing," prior to retail distribution within Burma.

The foreign-trade statistics, cited in a later chapter, show the large share which petroleum exports played in Burma's total exports. Table 18 shows that no less than 52 percent of India's petroleum imports came from Burma:

TABLE 18
SOURCE OF INDIAN IMPORTS OF PETROLEUM PRODUCTS, 1938-39*

Petroleum Products	Quantity in Thousands of Imperial Gallons		Value in Thousand Rupees		Percentage of Value Supplied by Burma
	From Burma	From All Sources	From Burma	From All Sources	
Kerosene	114,131	182,212	42,308	64,694	65
Motor fuel	40,060	73,880	16,735	31,411	53
Lubricating oils:					
Batching oil	9,500	16,464	3,877	6,488	59
Others	5,440	16,296	5,601	15,512	36
Fuel oils:					
Diesel	1,555	43,273	704	7,972	9
Others	1,395	93,515	205	11,831	2
Other oils	11,356	13,011	6,978	8,802	79
Totals.....	183,438	438,651	76,408	146,740	52

* *Annual Report of the Seaborne Trade of India, 1938-39.*

It will be noted that Burma was the source of over half the total supply of all products except fuel oils and miscellaneous lubricating oils. Since Burma oil had a very high paraffin content, it was not generally used for fuel, even in Burma - supplies being imported from the Near East for that purpose.

As indicated above, the Burmah Oil Company had a near monopoly of Burma oil production and refining, and had important connections with the Anglo-Iranian and Shell companies. In 1938 it held stock in the former company valued at £5,342,985, at an average cost value of 8s. 10.60d. Its financial position was excellent, 1937 dividends, for instance, having equaled 30 percent, on the common stock. The accounts for the years just before the Japanese invasion are shown in Table 19.

TABLE 19
BURMAH OIL COMPANY ACCOUNTS*
(Pounds Sterling)

Items	1939	1940	1941
Trading profits†	2,298,328	2,768,233	3,530,711
Total profits†	4,684,361	3,769,498	4,867,894
Depreciation	370,000		
Taxation‡	673,051	1,171,728	2,071,565
Fees and expenses	207,395	149,158	113,881
Preferred dividends	200,000	300,000	300,000
Ordinary stock			
Earned	3,133,915	1,845,612	2,382,448
Paid	2,884,668	2,060,477	1,717,064
Earned percentage	22.8	13.4	17.3
Paid percentage	21.0	15.0	12.5
General reserve	250,000	250,000	650,000
Carry forward	701,401	236,536	251,920

* *The Economist*, London, December 19, 1941.

† After depreciation in 1940 and 1941.

‡ Including £400,000 to tax reserve in 1940 and £150,000 in 1941.

After the evacuation of Burma, the Burmah Oil Company set aside a "War Contingencies Fund" of £3,400,000, an amount equivalent to the book value of assets in Burma. Sir John Carr-gill, the chairman, pointed out that this sum would not suffice for reconstruction of the facilities of the company, but he be-

lieved that "it may reasonably be assumed that, when the time comes, the resources of the group will prove adequate for reconstruction." The resources of the company outside Burma include the Assam Oil Company, Ltd., and the Tinsplate Company of India, Ltd., in addition to which it is believed to have owned some securities of larger companies. It had a liberal labor policy, providing better wages, housing, medical, and recreational facilities than those enjoyed by the great majority of Burmans. In spite of its great prewar profits, it was not particularly unpopular with Burmese nationalists. It is hoped to have the B.O.C. wells and refineries in operation again by 1949.

The Indo-Burma Petroleum Company, a subsidiary of Steel Brothers, paid dividends of 17½ percent in 1940.¹

Newspaper and magazine readers throughout the world read of the highly successful demolition of oil facilities in Burma in the spring of 1942. The Burmah Oil Company co-operated in the destruction of millions of dollars' worth of its properties. The Japanese may have produced as much as 80,000 long tons of petroleum and products in 1943, but by the end of the following year successful Allied bombing had brought oil production almost to a standstill.

Unfortunately, production continued to be virtually at a standstill throughout 1945 and 1946. An Oil Project was set up, which consisted of a combination of prewar companies, including even the Standard Oil Company of New York, which had been an importer, chiefly of lubricating oils and kerosene, but had owned no production or refining facilities in Burma. Unlike the Rice or Timber Projects the Oil Project was not financed by the government. On the other hand, the companies appear to take the position that since they had co-operated in the destruction of oil property at the behest of the government, they should not reinvest in the same industries without adequate compensation and/or firm prospects of future profits sufficient to justify the outlay. However, the official *New Times of Burma* reported, in its July 4, 1946, issue, that the companies "always supposing that their efforts will not be handicapped by

¹ *Rangoon Times*, April 10, 1941, reporting the annual meeting.

failure to settle the financial question or by any other setback beyond their control," hope to begin redrilling and reconditioning oil wells in 1946 and to have a new refinery ready for operation by the end of 1949. The terms of settlement have not been made public, if any settlement has been made. Nevertheless, the B.O.C. was the subject of favorable comment in the *Financial Times* of London in mid-February, 1947. Its stock was rising on the London market due to the fact that it paid 12½ percent dividends throughout the war, and in 1945 only half the profits were distributed.

It is understood that a Burmese group is considering setting up a small oil company.

THE BAWDWIN MINE

Although Burma was a poor sixth among world lead producers, the Bawdwin Mine, sole commercial source of the metal in the country, probably ranked first among the world's lead mines.² The high silver content of the complex Bawdwin ore is said to make that mine the leader among the world's silver mines. In addition, the country's entire output of copper, antimonial lead, nickel spiss, and cobalt came from this same bonanza.

There are signs of Chinese activity at Bawdwin for many generations past. In fact, when the smelters were first erected, early in the present century, they were engaged for some time in refining the tailings of primitive Chinese operations. The mine itself is about 40 miles northeast of Lashio, and about 11 miles from Namtu, where two large smelters and an ore-dressing plant are located. Namtu is connected with Nanyao, on the Burma Railways, and with Bawdwin, by a two-foot-gauge company railway. Electric locomotives are normally used on the mile or so of this railway which is inside the mine, and for operations in Namtu, around the smelters, etc. The *Mining*

² St. François County, Missouri, leads other American countries in lead production, and in 1936 its six related mines or shafts produced 107,422 long tons of lead and 44 tons of zinc, against 73,000 long tons of lead and 43,000 long tons of zinc (metal content) from Bawdwin the same year.

Yearbook of 1942, describing the properties just before the Japanese invasion, stated:

The present equipment consists of five blast furnaces, necessary sintering plant and refinery, concentration plant and various mining equipment. A mill with a capacity of 800 to 1,000 tons per day commenced work early in 1940. Hydroelectric plants have been erected at Mansam and Konnyaung. The ore body is situated in the center of a big hill. A main shaft has been sunk and is connected with the Chinaman Tunnel level. The length of the Tiger Tunnel is 7,250 feet.³

Lead and silver were sent out as pigs, in refined form. The ore-dressing mill used the flotation process to separate lead from zinc, after which the former was smelted locally and the latter exported to Belgium or elsewhere for refining.

The Bawdwin Mine itself had 15 "levels" over 100 feet apart, with innumerable galleries leading off from the main shafts. Tiger Tunnel enters the mountainside on level six, and travels about 6,000 feet before entering the ore body, continuing for about 1,000 feet more. It has a double-track, electric railway. Ore from lower levels was brought up by huge electric lifts, while ore from higher levels reached level six through chutes.

Gurkhas and Indians formed about 2,000 of the 3,000 underground workers, while Sino-Shans and Chinese were the remainder. The workers in the smelters and dressing plant were a polyglot group, Oriyas and other Indians predominating. The company provided hospital, shopping facilities, and recreation facilities to attract and hold a labor force in this remote corner of a strange land. The prevailing winds blew the poisonous fumes of the smelter back onto the hills which were completely devoid of vegetation, perhaps further depressing the spirits of homesick workers. It will be noted that Burmans and even Shans were an insignificant part of the labor force.

After reaching Namyao via the narrow-gauge company railway the ore had a 600-mile journey to Rangoon, whence it was exported. This long haul provided the Burma Railways with a highly dependable and important source of revenue.

³ *Mining Yearbook*, 1942.

Practically all the products of the Bawdwin Mine were exported, and 1940-41 exports were officially reported as follows:⁴

Copper*	1,829 long tons
Antimony concentrates†	706 long tons
Lead‡	51,700 long tons
Zinc smelter§	22,407 long tons

* Metal content of the copper matte.

† To the United Kingdom and India. The antimonial lead in 1936 was 81.6 percent lead, 17.74 percent antimony, 0.22 percent copper, and 3.49 oz. per ton silver.

‡ Mostly to the United Kingdom. Exports in 1938 were 38,560 long tons, but shortage of shipping and wartime dislocation prevented export of the full production in 1940 and 1941. Hence, large quantities of Bawdwin ores and metals were captured by the Japanese.

§ Until 1939 Belgium was the chief market for zinc concentrates, after which Australia became the principal market, until Japanese occupation.

It should be borne in mind that the exports in 1940-41 were considerably below normal, and also below current production, because of war conditions.

Demolition in 1942 was much less complete than in the oil fields, but the chief hydroelectric plant was partially demolished. This plant was situated at Mansam, 26 miles from Namtu. Its 1939 output was 45,415,200 kilowatt-hours. The smaller Konnyaung plant produced 8,205,000 kilowatt-hours in 1939. It was restored to operation by the Japanese with little delay. The two Diesel plants generated 187,010 units in 1939, and the steam-turbo generator station at Namtu produced 719,620 units. Sledge hammers were used to destroy machines in the ore-dressing plant. The pumps were stopped, of course, and hence that part of the mine below level six (the Tiger Tunnel) was flooded.

The Japanese apparently attempted to import transformers and other equipment with which to restore part of the electric production capacity. The Military Bawdwin Mining Enterprises, a subsidiary of the Mitsui Mining Company, was in charge. Toward the end of 1944, production was allowed to taper off, some engineers being sent elsewhere, and no further machinery being imported. The smelter was not restored to operation, and the ores were merely crushed in the ore-dressing

⁴ *Annual Report of the Seaborne Trade of Burma.*

plant, but it appears that shipping difficulties prevented them from sending anything to Japan except prewar stocks of lead, zinc, copper, etc. On the whole, Bawdwin made no contribution to the Japanese war effort.

Chinese troops recaptured the Bawdwin mines in February 1945. Damage there and at Namtu was very heavy.

The war almost certainly prolonged the life of the Bawdwin Mine. Over half the metal content of the mine, as hitherto proved, has been removed. The company estimate of reserves in 1940 and 1941 was as follows:

RESERVES OF THE BAWDWIN MINE

	1940		1941
Total reserves . . .	3,411,192 long tons	3,130,199	long tons
Silver	15.7 oz. per ton	15.1	oz. per ton
Lead	20.4 percent	19.5	percent
Zinc	12.6 percent	12.1	percent
Copper .....	.9 percent	.84	percent

It is, of course, possible that some additional deposits will be discovered, as extraction and exploration continue. On the other hand, the presently *known* reserves of the mine would be exhausted by another eight years of operation on the 1940-41 scale. Moreover, it will be noted that the richer ores were being removed first, for the percentage of each metal declined between 1940 and 1941.

The more optimistic aspect of the future of the mine is that, although it produced 1,549,302 tons of lead between 1909 and 1940, as well as 1,019,142 tons of zinc concentrates between 1921 and 1942, the "known reserves" in 1941 were about the same as in 1920! All that can be safely predicted, in view of these facts, is that the mine will continue to be one of the world's greatest producers for at least a few years after reoccupation if it is fully restored to operation. At present there seems no prospect of prompt reopening of the mine, perhaps due chiefly to Burma's unsettled conditions, and also to the seriousness of wartime damage, necessitating an investment so great that it may not be justified in view of the depleted state of the reserves,

which are only ten times the 1940-41 production.⁵ The Burma Corporation is quite solvent, however—its 1944-45 Profit and Loss account showing receipts of Rs. 642,389 for interest on investments.

MAWCHI MINES

Another outstanding mine, or series of mines, was situated at Mawchi, east of Toungoo in the backward state of Karenni. Presumably the term "mines" is used in the plural because there are a series of adits or drift tunnels leading in from the face of a steep mountainside. The total area worked is, however, much smaller than the Bawdwin Mine. Counting it as one mine, it is believed that Mawchi ranks first in the world among individual tungsten mines, and third among individual tin mines.⁶ It produced about half the tin and tungsten of the country.

The labor, as at Bawdwin, consisted largely of Gurkhas and Indians, but some local Karens were also employed. A number of European engineers were in charge of operations. As at Bawdwin and Namtu, the company necessarily provided most of the housing and other amenities for the employees.

An overhead ropeway connected the mine with the concentration plant, about half a mile away, near the bottom of the steep valley. Small hydroelectric plants provided power for the concentration plant, and electricity for the entire community.

From about 1938 to 1942 Mawchi Mines ores were shipped to Rangoon for export via a winding 93-mile mountain road to Toungoo. This meant that the total journey was 268 miles, about half the previous distance via Kemapynu, on the Salween, then north to Hopong and Taunggyi, west to Thazi, and then

⁵ Colonel D. Rees-Williams, who traveled over 2,000 miles through Burma in the spring of 1947 on an important mission for the British Parliament, wrote an article for the *New Statesman and Nation*, May 31, 1947, in which he stated: "The Bawdwin Namtu Mines [Bawdwin Mine and Namtu Mill and Smelter are doubtless referred to. J.R.A.] were so successfully 'scorched' that some £3,000,000 will have to be spent in restoring them and there are suggestions that the life of the mines may not be a long one."

⁶ Yet Burma was a poor fourth among southeast Asia tin producers. Figures for 1939 or 1940 metal content based on official reports and the *Minerals Yearbook*, 1940, were as follows: (in metric tons) Malaya 85,384, Indonesia 44,447, Thailand 17,447, Burma 5,879, and Indo-China 1,560.

down the railway to Rangoon. In the earliest days of the mine's operation, ore was shipped from Kemapyu to Moulmein by river and road, and it is possible (but unlikely) that the Japanese made use of this route.

Known reserves are fairly impressive, having increased in the first half of 1936, for instance, from 289,120 to 395,720 tons. Moreover, the company carried on extensive prospecting on its lease to the east of Mawchi, discovering large deposits of decomposed granite with an apparent metal content which would justify continued operation even when the much richer Mawchi ores are exhausted. Thus there is good prospect of a sizable tin and tungsten output from the Mawchi area for many years.

The power plants were demolished before evacuation, but the Japanese carried on a little production until 1944. Ore was shipped by road to the foot of the mountains, then by boat to Toungoo.

Colonel Rees-Williams reported recently that the Mawchi Mines had "commenced production again."⁷

OTHER TIN AND TUNGSTEN PRODUCTION

The other half of Burma's tin and tungsten came from a number of dredgers, sluices, and mines in Tenasserim, chiefly from Tavoy District. Production was mostly from British-owned properties. Dredges were the chief source, followed by the sluicing operations at Kanbawk. Third in importance was the Hernyingyi Mine of Consolidated Tin Mines, Ltd. This latter was the only large-scale underground mine in Burma proper, as Mawchi is in the Karenni States. The Hernyingyi mining operations consisted of a large number of short adits, using as power the muscles of Indian and Chinese miners, assisted in some cases by compressed-air drills, an electric-driven shaft winder, and surface incline haulage to the head of the mill. The mill had crushers, conveyors, jigs, and tables.

The Japanese did not use the dredgers at all, but they ap-

⁷ *Ibid.*

pear to have produced perhaps one ton of concentrates monthly from Hermyingyi.

Tenasserim had two or three small concentration plants and four magnetic separation plants capable of handling about 5,000 tons of mixed concentrates annually.

The official *Survey of Departmental Activities* reported in December 1946 that: "the first shipment, amounting to some 347 tons of tin concentrate to the United Kingdom . . . has recently been despatched. The concentrate consists mainly of ore worked or purchased by the Japanese while in Tavoy." The January issue of the same survey reported that exports of tin concentrate in December were valued at Rs. 82,680. The high price of tin was expected to stimulate production.

MISCELLANEOUS MINOR MINERAL PRODUCTS

Most other minerals are either not known to be present in Burma or have not been worked on a commercial scale.

Coal.—Coal was produced from a promising mine in Mergui District a number of years ago, but operations were discontinued for an unknown reason—possibly loss of a collier ship. A little "brown" or very poor-quality coal was produced near Kalaw in the Shan States, but there was no market for it.

Salt.—Burma produced about 40,000 long tons of salt annually and imported roughly 60,000 tons from Germany, Aden, and Egypt. However, the local production was capable of considerable expansion, for with the cutting off of German imports it increased to around 90,000 tons in the year 1940-41. Amherst District produced an estimated 80,000 tons by boiling sea water.⁸ There is a very small salt production from saline soils, springs, and wells in the Dry Zone. The Agricultural Projects Board administered the Salt Project after the reoccupation of Burma. Amherst production was limited to 30,000 tons annually because of shortage of fuel, and the Project agreed to purchase 5,000 tons of surplus at a fixed rate, since

⁸ See H. L. Chibber's *Mineral Resources of Burma*, pp. 211-22, for an authoritative discussion of the Burmese salt industry.

Amherst alone produced more than enough for the local market. Considerable salt imports are still required, but in January 1947, "Import of salt was brought under license with a view to safeguard the indigenous salt industry."⁹

Antimony.—In addition to the production of the Bawdwin Mine, the Geological Survey of India has discovered deposits in other parts of the Shan States, suggesting the possibility of future exploitation.

Rubies and other precious stones.—According to Dr. Coggin Brown of the Geological Survey of India, the better classes of rubies and spinels from Burma are "of incomparable beauty . . . and easily the best specimens found anywhere in the world." Production centers around the town of Mogok, in its beautiful mountain setting north of Mandalay in the Shan Hills. Although production had by 1936 fallen to 107,915 karats, past production has been very much greater. The following note was kindly supplied by Mr. F. W. Binge, Chief Inspector of Mines, Government of Burma:

The first European company commenced operations in 1889 at an annual rental to Government of Rs. 315,000. A second lease was granted in 1897 for Rs. 200,000 plus 30 percent of the net profits and a third in 1904 at the same rate. Apart from any addition from a share of profits, Government has received in revenue alone from gem mining at least Rs. 10,785,000 since 1887. The revenue figures . . . indicate roughly the scale and value of these operations. No figures of actual value of production can be obtained, but the actual value . . . must be at least five times this amount and may be . . . ten to twenty times as much, according to one's opinion of the miners' astuteness. It may be seen that so far as actual revenue is concerned the Gem Industry has probably to date provided a better return to Government than the Tin-Tungsten industry.

Dredging was tried for a time, but was not economical, reportedly because of thefts by laborers operating the large dredger. A positive result of these operations was a large lake in the center of the town, enhancing the beauty of the place.

⁹ *Survey of Departmental Activities*, February 1947, p. 5.

Sapphires and a number of other precious stones are also produced in commercial quantities at Mogok.

Jade.—Near Mogaung, in Myitkyina District, are jade mines which have attracted the Chinese for generations. Exports amounted to about Rs. 200,000 annually. Mr. Binge comments as follows:

The deposits are said to have been discovered and worked by the Chinese since the 13th Century. Export in the early days was by means of the old trade overland route. The figures of export values are fallacious and bear little actual relation to the true value of the final cut product in China. It is of interest also that the high reputation of jade amongst the Chinese does not appear to result from the occurrence of any known domestic source in China. Of the two varieties of jade in China, one, jadite, comes apparently from Burma, and the other, nephrite, from South Turkestan.

EXPORTS

Exports were approximately equal to production, for all the chief metals. Recent figures are shown in Table 20.

TABLE 20
EXPORTS OF CHIEF METALS FROM BURMA

Commodity	1936	1937	1938	1939	1940	1941
Lead (pigs)*	60,313	62,054	76,429	75,527	71,071	46,161
Concentrates						
Zinc†	75,982	75,491	68,571	51,598	30,780	20,006
Tin‡	4,186	3,016	2,785	2,938	3,462	5,513
Wolfram§	7,825	9,039	10,147	10,690	12,145	10,282
Antimony|| ...	¶	¶	¶	310	630	706

* Chiefly to the United Kingdom.

† Chiefly to Belgium until 1939, then to Australia.

‡ Chiefly to the United Kingdom until 1939, then to the Straits Settlements.

§ Chiefly to the United Kingdom. Some went to Singapore for smelting and re-export.

|| Mostly to the United Kingdom and India.

¶ Not separately recorded prior to 1939. Source: *Seaborne Trade of Burma and Burma Trade Journal*.

It will be noted that exports fell off, in the two leading categories, in 1940, and dropped drastically in the three leading categories in 1941, due to war conditions.

REVENUES

Burma's mineral production does not appear to have been taxed heavily. Figures of mineral revenues for the Government of Burma for 1938-39 show receipts as follows.¹⁰

	<i>Rupers</i>
Petroleum	3,850,000
Tin and wolfram	490,000
Jade and amber	17,000
Precious stones	242,000
Other minerals*	282,000

* Chiefly from the Burma Cement Company, on account of its Thayetmyo plant.

Since the two chief mines---Bawdwin and Mawchi, were not administratively included in Burma proper, revenue derived from them does not appear in the foregoing table.

It should be borne in mind that petroleum revenues collected by the Revenue Department did not relate to the tax of about 10 annas (20 cents) per imperial gallon paid by the motorist on purchase of his petrol.

¹⁰ *Land Revenue Administration*, 1938-39, chapter v.

IX

HANDICRAFTS

GENERAL HAND MANUFACTURING

LARGE-SCALE industry in prewar Burma was confined to a thousand factories with about 90,000 workers. Most of the country's "manufacturing" therefore, was done by hundreds of thousands of part-time and full-time handicraft workers. Eighty percent of those listed by the 1931 Census as engaged in manufacture lived in rural areas.

Handicrafts have flourished throughout many centuries of Burmese civilization. Only a few generations ago craftsmen supplied the king's court and village markets without suffering any competition from factories. In the more remote mountain areas self-sufficiency is still the rule, and the simple handicraft industries continue unaffected by the passage of time.

The competition of the machine caused a serious decline in the importance of handicrafts in the more populous parts of the country, but it did not by any means wipe them out. Hence the Japanese invasion, and consequent disruption of activity at most factories, together with cessation of imports of civilian consumers goods, did not prove as great a blow as would have been the case in a more industrialized country.

Considering the fact that most rice cultivation must take place between June and January, with not much useful work being done during the hot season, it is desirable that handicrafts continue to play a large part in Burma's economy by furnishing employment in the slack seasons. It has been suggested by an eminent student of the problem that efforts be made to encour-

age and extend subsidiary forest industries. Presumably lacquerwork, basketry, matmaking, furniture making, wood carving, and possibly silk production would be among such industries.

COTTON AND SILK TEXTILES

Cotton spinning, sizing, and weaving rank first among handicrafts, with a 1931 employment of about 230,000.¹ Of the total of 234,892 engaged in these occupations both in factories and at home, only 4,027 were males—perhaps a fourth of them being employed in the small industrial establishments. Of the women only 40,091 were engaged in cotton spinning, etc., as a principal occupation. Only an estimated 1 percent of the workers in this field were listed as living in urban areas.

Particularly in the Dry Zone it was possible to find large numbers of looms, spinning wheels, and hand cotton gins or rollers under many village houses. However, they were usually idle and covered with dust—relics of an age when imported longyis were neither so cheap nor so attractive. It was noted that a very large proportion of the workers were old people and children, not readily employable otherwise. Moreover, some of the old people acquired their skill when foreign competition was less intense.

Burma hand-loom weavers used practically all the 3,582,422 pounds of yarn produced at the Myingyan spinning mill in 1938-39, in addition to most of the 16,564,000 pounds of imported yarn.² Yet not over a tenth of Burma's cotton textiles were locally woven. It will thus be noted that weaving was much more important than spinning, in response to obvious economic incentives. Weaving among Karens, Kachins, and other tribes was normally done with the aid of a handful of bamboo sticks which would never be recognized as a loom by Westerners. The Government of Burma sponsored the Saun-

¹ The 1931 Census figure for total employment in the cotton industry was 234,892, of whom a few thousand were employed in the Myingyan cotton mill and smaller industrial establishments.

² The Violin Hosiery Works, near Rangoon, and a few smaller knitting factories used some of the imported yarn.

ders Weaving Institute at Amarapura, near Mandalay, where students were taught the use of the flying shuttle and other improved methods and devices. Traveling demonstrators went around the country taking orders for the flying-shuttle attachment and giving lessons in its use. The postwar future of handloom weaving is problematic. In the prewar period workers earned wages about equivalent to those paid day laborers, but a small amount of capital had to be invested. The use of the best available equipment would probably enable the industry to hold its own competitively.

There was but little silk production in Burma. However, Amarapura and Shwedaung, near Prome, had scores of small weaving sheds where handloom weavers turned out beautiful silk garments. Foreign competition, from rayon as well as from silk, appears to have been intense, but the Burmese silk-weaving industry produced a good quality product which had a well-established place in the market. Silk spinning and weaving employed 45,908 part-time and full-time workers in 1931.

The rather encouraging start made in putting the home-weaving industry back in operation during the reconstruction period is described as follows in the official *New Times of Burma* for May 17, 1946.

The Cottage Industries Department has obtained permission to transfer 10,000 viss³ of confiscated cotton from Myingyan for distribution to weavers through the Burma Handloom Textile Depot which is being opened under a scheme for the development of the handloom industry. Government is now considering a proposal for the manufacture of spinning wheels and looms for the spinning and weaving industry. Ways and means are also being explored for the import of foreign yarn of a superior quality.

Arrangements are being made to transport a number of enemy-owned spinning machines lying in Amherst District to Rangoon before the rains set in.

A good start has been made in weaving industry in Upper Burma. The Superintendent of the Saunders Weaving Institute, Amarapura, is helping to distribute yarn to weavers under the Mandalay Deputy Commissioner's Weaving Project.

³ One viss equals 3.65 pounds.

During January and February 1947, a total of 2,750 bales of cotton yarn were imported from Japan for handloom weaving, 42 students were under training at the Saunders Weaving Institute, the Government had imported dyes for distribution to small producers of cloth, and had disbursed numerous small loans to weavers. All in all, the provisional government appears to be proceeding with considerable vigor to encourage this and other types of cotton industry.⁴

LACQUER

Second in importance among handicrafts was lacquer, with a total employment of 66,462 in 1931. Burmese forest products and indigenous craftsmen combined to turn out a product which was perhaps less artistic than that of Japan or China, but which nevertheless found a ready local market, and attracted a few tourist customers. The Cottage Industries Department of the government had a lacquer school at Pagan, an ancient city between Chauk and Myingyan, where improved methods were taught. Perhaps the most widely used product of the Burmese lacquer industry was the "thabeik" or begging bowls, used by the more than a hundred thousand Buddhist monks. Flower vases, used both for the decoration of family shrines and in holy places, as well as for ordinary decorations, were purchased by rich and poor. Teapoys and other ornate items adorned the homes of the well-to-do.

MISCELLANEOUS HANDICRAFTS

Tailors, milliners, dressmakers, and darners numbered 51,190, and comprised the third largest group of handicraftsmen. Indians were particularly prominent in urban areas, in connection with this type of employment. It is thought that a larger than average proportion of them were full-time workers. Considerably less than half those employed in all cottage industries were full-time workers.

Carpenters, turners, and joiners numbered 42,260, and they also are believed to have included a rather high proportion

⁴ *Survey of Departmental Activities.*

of full-time workers. In the cities Chinese were particularly prominent, but large villages normally had Burmese carpenters.

A total of 36,434 were engaged as "*toddy*" *drawers*, manufacturing liquor from the juice of the palm. In most cases, toddy palms were found in the Dry Zone.

Kipling's "whackin' white cheroots" were probably made of cornhusks or of a special leaf from the Shan States. Hence when 24,296 are listed in the Census as "manufacturers of tobacco" it is doubtful if all of them rolled cheroots made of tobacco. More likely, the total includes those engaged in the manufacture of cheroots and kindred products from tobacco, maize husks, and leaves. Manufacture of tobacco and kindred products flourished in Mandalay, Pinyinmana, and elsewhere in the Dry Zone, but was also found in many other parts of the country.

Makers of jewelry and ornaments numbered 21,680. Many were engaged in the production of artistic silver bowls. It is probable that the total includes the considerable number of persons in Mandalay, Rangoon, and elsewhere who engaged in the manufacture of bronze images of the Buddha. Burmese silverwork is ordinarily ranked considerably below the best Indian craftsmanship in that field.

Blacksmiths accounted for but 12,997 workers. In view of the scarcity of iron and coal, and of the near-absence of the practice of shoeing draft animals, it is not surprising that their number is small. The official rehabilitation program included the issue of steel to local blacksmiths by the Agricultural Department. The blacksmiths were encouraged to produce plowshares and dahs (universally used cutting implements, heavier than a corn knife), both of which are urgently needed.⁵

Potters numbered 12,454. Twante, on the canal of the same name, was one of the outstanding centers of pottery manufacture. The chief product was "Pegu"⁶ jars, being water jars of about ten gallons capacity, and of no particular beauty.

⁵ *The Burman*, Tuesday, June 11, 1946.

⁶ These are *not* made, in any numbers, at the large town of Pegu.

The Burmese pottery industry as a whole was strictly utilitarian in purpose, there being little effort to produce items comparable to the products of Chinese and Japanese ceramic art. Nearly all the product was unglazed or partly glazed.

Metal casting, or manufacture of cooking utensils and tableware from airplane scrap, was encouraged by the Royal Air Force as a rehabilitation measure, the RAF supplying scrap free of charge to metal workers. The product filled a great need in villages which had been without imported articles for several years.⁷

HANDICRAFTS UNDER THE JAPANESE

As might be expected, the cutting off of civilian imports consequent upon the Japanese invasion gave a tremendous stimulus to handicraft industries of all kinds. But even if Japanese misrule and numerous other handicaps of the war period had not intervened, the many years of decline of handicrafts had made it much more difficult for Burmans of 1942 to manufacture things for themselves than would have been the case for their grandparents.

The Japanese radio claimed that 250,000 to 300,000 looms were in operation in the spring of 1943, and early in 1944 it was known that Japanese uniforms on the Myitkyina front were the products of Pyinmana and Thazi hand looms. Probably a fair proportion of local cotton production was spirited away from the fields at night to supply local spinners and weavers. Ambitious goals were fixed by the Japanese, but they were never reached, for at the time of reoccupation Burma was found to be experiencing a most acute shortage of every kind of textile. People in Burma were often clothed in gunny sacks and other materials not used by even the poorest in the preceding period; while one case of suicide was reported—the Karen girl in question being quite without clothing.

Cigarette lighters were manufactured in small quantities before the war, but an excise duty, supposedly at the instance of the match companies, prevented its growth. Wartime pro-

⁷ *The Burman, loc. cit.*

duction was stimulated by the drastic shortage of matches. Rangoon, Moulmein, and Pyawbwe were the chief centers of the lighter industry. Some matches appear to have been produced by hand methods in Pegu, Bassein, Monywa, and Mandalay.

Cigarette lighters continue to be produced in small establishments, and newspapers occasionally publish plans for the protection of this industry.

A type of "soap-sand" was made before the Japanese invasion, but the availability of the genuine article made it a poor substitute of limited consumer appeal. According to one source, as much as 9,000 tons was manufactured in one year at the end of Japanese occupation.

The laboratories of the Mandalay Agricultural College have been used extensively for research into ways and means of increasing production of paper, gunny bags, soap, and cigarettes by the handicraft industry.

In the spring of 1944 the Kitaro Jikojo Company came to Mandalay for cobblers, so it is presumed that there was an increase in the leather industry, although further evidence is lacking.

There were frequent announcements by the Japanese government of the dispatch to Burma of specialists who would teach Burmese to manufacture their own goods. Spinning, weaving, straw manufacture, paint, gunny bag, leather, candles, soap, illuminants, substitute cement, ice, and tobacco were among the industries mentioned. Available evidence, however, shows a dearth of almost every kind of consumers' goods. Such efforts seem to have been of little success.

FUTURE OF BURMESE HANDICRAFTS

Wartime hardships caused Burmans to improvise, to develop cottage industries, to compensate as much as possible for the cessation of imports. One possible residual effect of the war developments may be the production of improved pottery, as well as also of insulators for the electrical industry. Such pottery was made at Thamaing, under Japanese supervision, in a war pottery factory.

Since the Burman frequently has clever hands and

mind, there is every possibility that handicrafts will improve in the postwar period, and compete rather successfully with imports and with local large-scale industry. These remarks apply even to the more densely populated river valleys, for it is obvious that remote mountain areas will always have local handicrafts unless and until roads or other means of transport end their remoteness. Burma's Dry Zone even now produces a number of crops which might form the basis of cottage industries, and the Burma forests furnish many more. Burmese carved elephants can bear comparison with those of any other country, and perhaps competition with superior foreign products and well-directed vocational education may develop crafts which will be a permanent and prosperous part of Burmese economy.

The commendable interest of the present provisional government appears to be resulting in practical measures, including exhibitions at home and abroad, which may cause Burmese handicrafts to increase in quality and to fill a larger share of the home demand, while developing a small but not unimportant export market for art goods.

X

FACTORIES

GENERAL STATEMENT

THE rather extensive integration of Burma's economy with the economies of India and Europe resulted in a regional specialization or division of labor which made Burma almost entirely a producer of raw materials and semifinished products, while it imported manufactured products from other and more industrialized countries. Burma's small factory industry was never protected by a tariff against Indian competition, and the tariffs against Empire products, and even foreign products, were never very high. On the other hand, foreign firms with well-established connections abroad, stood ready to dispose of the rice, teak, rubber, lead, petroleum, and other products of Burmese field, well, mine, or forests.

Burmans, like nationalists in most other nonindustrial countries, did not like this situation, for they noted that nearly all the politically and militarily strong countries were highly industrialized.

Numerous public utterances by Burmese leaders suggest the likelihood of a vigorous program of industrialization as soon as the new national government is in a position to give detailed attention to this aspect of national development. It will be interesting to note the results of such efforts to overcome the handicaps of a late start and lack of domestic coal, iron, and capital.

Since Burma's soil, climate, forests, and mineral resources made it a particularly favored supplier of products greatly in demand in India, Europe, and elsewhere, it is not surprising

that Indian and European firms developed factories which could mill the rice, saw the timber, refine the petroleum, or concentrate the ores preparatory for export. It is perfectly natural that no early attempt should be made to build factories to cater to local demand, for at first local demand was for the products of a simple handicraft economy. This demand developed, of course, as foreign cloth, electrical goods, bicycles, and other appurtenances of civilization were imported, but the import came first, and only after a time was there sufficient demand to justify the erection of a factory.¹ In fact, up to the time of the Japanese invasion, it is doubtful if local demand for a commodity like bicycles, for instance, was sufficient to keep busy a factory of efficient size. Therefore, to ascribe to foreign industrialists a desire to "exploit" the Burman by developing only export industry, seems quite unjustified. The pattern of Burmese industrial development was almost exactly the same as that of any other region newly opened to world commerce. It did not differ greatly from that of the United States in the first half of the nineteenth century.

On May 5, 1947, there was announced the setting up of a National Planning Board, consisting of the Hon. Member for Planning, as chairman, two other cabinet officers, and other well-qualified members, including Dr. Hla Myint, Professor of Economics in Rangoon University. The announcement continued: "The functions of the Board, broadly speaking, will be:

(i) To prepare for the consideration of the Governor an integrated development program for Burma

(ii) To decide questions of priority as between different schemes

(iii) To convert the development plans of each Department into a territorial plan for each region or district

(iv) To keep constant watch over the preparation and execution of the development plans of each department or sub-committee."

¹ For an interesting, if somewhat unusual, discussion of demand as a factor in Burmese economy and culture, see Furnivall, *Political Economy of Burma* (Rangoon, 1938), chapter x.

STATISTICAL SUMMARY

Table 21 shows the main types of factories in 1940 and the average number of workers in each type. It is condensed from the *Annual Report on the Working of the Factories Act* for that year.

TABLE 21
 FACTORIES IN BURMA, 1940*

Type of Factory	Number of Factories	Number of Workers
Woolen mill	1	430
Cotton mill	1	1,286
Hosiery and underwear	2	1,137
Dockyards, etc.	9	2,201
Ordnance	1	516
Railway workshops	12	3,293
Coach building and motorcar repairing....	8	727
Electrical engineering	4	158
Electric power	3	353
General engineering	19	2,991
Tramway works	2	264
Metal-ware factories	3	258
Ore-treating mills	4	105
Petroleum refineries	10	7,154
Pumping stations (oil)	5	173
Bakeries, etc.	3	170
Breweries	2	195
Flour mills	3	146
Ice and aerated waters	7	346
Rice mills	673	41,626
Sugar and cane-juice	5	1,386
Water pumping stations	2	94
Dyeing and bleaching	1	47
Matches	5	1,984
Soaps	1	579
Starch products	1	233
Vegetable oil mills	29	1,513
Printing presses	19	2,681
Sawmills	116	11,579
Carpentry, etc.	4	98
Cement, lime, and potteries	3	325
Bricks, tile, stone	2	44
Cotton gins	54	3,766
Jewelry	2	79
Rope works	4	475
Rubber plantation factories	2	47
Rubber goods	2	389
Sewage pumping	1	42
Quinine tablets	1	63
Leather and shoes	1	130
Total (1940)	1,027	89,383
Total (1939)	1,031	87,946

* "Factory" means "premises in which power is used in aid of the manufacturing process and where 20 or more workers are employed."

It will be noted that two-thirds of the factories were rice mills, and employed nearly half the total workers. Sawmills and cotton gins were next in number of factories, although petroleum refineries, headed by the large Burmah Oil Company refinery at Syriam, had more employees than did the cotton gins. All four types of factories processed Burmese raw materials, primarily for export. However, a significant proportion of the rice, lumber, and petroleum products was consumed within Burma.

Of the 1,027 factories in Burma in 1940, only 61 (cotton gins, sugar refineries, and rubber plantation factories) were listed as seasonal; the remainder operated more or less the year around. However, the rice mills are much busier just after the harvest than during the monsoon season.

Rangoon town had 134 of the factories, and 23,727 of the workers. In other words, nearly 30 percent of the factory workers were employed within the city limits of Rangoon. Mantawaddy and Insein districts included Rangoon's industrial suburbs, and had another 18,487 workers. Insein Road, connecting the capital with the headquarters of Insein District a few miles away, has been called "the road of a thousand smells" because of the numerous small industrial establishments, such as tanneries and soy-sauce manufacturers, which line the road.

RICE MILLS

Upper Chindwin District—a remote and undeveloped area—and five Dry Zone districts were the only ones without rice mills. However, the Pegu and Irrawaddy divisions, centering around Rangoon and Bassein, had most of the larger mills, catering to the export trade. Moulmein and Akyab were the only other rice-milling centers of considerable importance. In fact, Rangoon's thirty-six mills processed a very high proportion of total rice exports.

Rice intended for local consumption was ordinarily milled in the nearest town, or even in small mills located at crossroads or on stream banks, not very near any town or village. Many

of the smaller mills were of German origin, small enough to escape inspection under the Factories Act. Hence the figure of 673 for rice mills is almost certainly too low.

The larger mills were mostly owned by Steel Brothers or other important European firms.² However, Indians owned a number of medium-sized mills, and Chinese owned a few. Indians reputedly exported more rice than did Steels and the other European firms. Country mills, operating for the local market, were often owned by Burmans. It will be noted that in this industry, as in most others, Burmans were fairly enterprising in supplying the needs of their own people, but lacked the foreign contacts and experience with which to engage in processing for the export market.

The mill polishing of rice in Burma, as elsewhere, ordinarily removed so much of the cuticle that health specialists advised the eating of hand-pounded rice, or at least of less highly polished milled rice. Prisoners in the jails complained bitterly of the "poor quality" of the semi-polished rice which was fed them, but they almost invariably increased in health on such a diet.

The parboiling of rice is described as follows:³

Parboiling involves the gelatinization of the grain by the action of steeping and steaming while it is still in the form of paddy. The paddy is first steeped in large brick tanks for periods of from one to three days in water which is initially between 140° F and 180° F, the bolder grains being given the higher temperatures and longer steeping. The paddy is then transferred to steel containers where it is subjected to low pressure for ten to twenty minutes until completely gelatinized. . . . After steeping and boiling the paddy is removed to sun drying floors. . . . When dry the parboiled paddy is milled in the same way as has been described for unboiled or raw paddy. Parboiling has the effect of toughening the paddy kernel so that it can be milled with far less breakage than is the case with raw rice. This kind of rice also has better keeping qualities than raw rice after it has been boiled for edible purposes and is therefore in particular demand by plantation and estate laborers who are able to cook sufficient rice at a time for more than

² One of the Rangoon mills, said to have been the largest in the world, was capable of producing 1,000 long tons of polished rice daily, *Burma Rice*, Burma Pamphlet No. 4 (Longmans, Green & Co., 1944), pp. 13, 17-18.

³ *Ibid.*, pp. 17-18.

one meal. Unlike raw or white rice, parboiled rice does not turn sour if subjected to the heat of the sun; and is therefore favored by laborers who can take cooked rice with them to their outdoor work and rely upon a palatable meal during the course of the day. Rice after parboiling also contains a greater quantity of vitamin as the process of parboiling tends to drive the cuticle and its vitamin content into the grains of rice.

Hand-pounding, by a mortar and pestle system, is common in outlying mountain districts, but is also found in villages close to Rangoon and other large centers. It is estimated that 8 percent of the total crop is milled by hand (or, more commonly, by foot). An interesting device widely used in the Shan States, has been described as follows:

The unhusked rice . . . is placed in a hollowed-out stone, about a foot deep and 15 inches in diameter. A wooden "pounder" somewhat smaller than the hole, is placed on the end of an 8-foot pole, balanced about 5½ feet from the hole. The other end consists of a large basin into which water flows from a bamboo flume. When the basin is full its weight causes it to fall rather suddenly, bringing up the pounder to a height of 3 or 4 feet. Then the water rushes from the basin, and the pounder falls with a thud in to the hole with its portion of paddy. Often several of these ingenious devices are owned by a single family, one of whose members finds it a simple and pleasant task to mill several months' supply of rice in a few days.⁴

An interesting sidelight on the rice industry was given by James Baxter, in his report on Indian Immigration, 1940. In Table 22 (p. 146) Mr. Baxter demonstrates that the larger mills predominantly European and Indian, employed mostly Indian labor whereas the smaller mills had nearly as many Burmans as Indians in their employ.

It will be noted that Burmans were much more prominent as skilled workers than as unskilled workers. This further emphasizes the fact that Burmans are readily adaptable to work with machinery, but that they would prefer to stay on the land than to accept back-breaking work such as carrying 200-pound bags of rice. It is also interesting to note that the mills with

⁴ J. R. Andrus, in *Foreign Commerce Weekly*, September 4, 1943.

over 500 employees (Steel Brothers and other large European firms) had a somewhat higher percentage of Burmese employees than mills with 400 to 499 employees (probably Indian in ownership).

TABLE 22
EMPLOYMENT OF BURMANS IN RICE MILLS OF VARIOUS SIZES
ON FEBRUARY 2, 1939

Total Number of Employees	Total of All Skilled Workers	Percentage of Burmans	Total Unskilled Workers	Percentage of Burmans
0-49	2,662	52.4	6,478	40.0
50-99	1,992	35.7	8,453	42.5
100-199	903	22.6	6,154	31.1
200-299	792	26.3	3,876	19.2
300-399	473	37.0	3,187	11.5
400-499	504	10.5	3,581	4.5
Over 500	2,112	25.4	18,997	9.5
Totals	9,448*	31.8	50,729*	22.1

* This total of 60,177 workers compares with 41,626, the official figure for 1940, quoted earlier in this chapter. There is no real discrepancy, since February 2 is at the height of the milling season, and the 1940 figure obviously covered a less busy season.

Many of the Rangoon and Moulmein mills were burned or otherwise damaged in 1942, but most of the smaller and scattered mills were not severely damaged. However, essential machines were shipped from many of them to Japan, so some replacement is necessary to permit resumption of milling operations. At the end of 1944 about half the Rangoon rice mills were operating, and with rice export virtually at a standstill, the other half were not needed. Advertisements in Burmese newspapers in 1943 advised Burmans to pound their own paddy—suggesting a shortage of milling capacity in some areas, at least. With transport facilities largely broken down, cultivators more than a few miles from an operating rice mill probably found it necessary to adopt hand methods to get their rice hulled at all.

Since nearly all the rice mills were operated by steam, and burned paddy husks for fuel, it is unlikely that the fuel problem bothered the Japanese. Repair of machinery may have been rather difficult, however.

Rice-milling machinery and spare parts have been imported in sufficient quantities to facilitate milling of the entire crop for 1946-47.

SAWMILLS

Sawmills followed rice mills in number and in total number of employees. They also existed to process a local product for use both locally and for export. The large mills, situated in Rangoon and Moulmein for the most part, catered to the export market. Most large mills were owned by three or four European firms, headed by Steel Brothers and the Bombay Burmah Trading Company. Some smaller Indian- and Chinese-owned mills were also located in the ports, while many smaller mills, often of Burmese ownership, were scattered about the country, providing timber for bazaars, monasteries, and the homes of moneylenders, landowners, and others who were prosperous enough to have timber or part-timber houses instead of bamboo huts.

In addition to the sawmills listed in Table 21, there were numerous saw pits, ordinarily owned and operated by Chinese, and employing two to six workers each. One sawyer stood above the log and the other in a pit, below, as boards were made "the hard way."

TEXTILES

Cotton gins.—Myingyan, Meiktila, Sagaing, and Thayet-myo districts had 54 cotton gins large enough to be classed as factories. The largest of these gins belonged to Steel Brothers.

Cotton spinning.—The only cotton-spinning mill was that of the Consolidated Cotton Company, a Steel Brothers subsidiary, at Myingyan. It had started out under Burmese sponsorship, and had been taken over by Steels after failing to operate profitably. In 1940 it had 1,286 employees but was able to consume only a small part of Burma's nearly 20,000-ton cotton crop. The *Burma Trade Journal* for April 1939 reports that 1938-39 yarn production amounted to 3,582,432 pounds, nearly 90 percent of which was in the range 11s-20s.

Knitting mills.—Most of the 1,137 workers employed in the underwear-knitting industry in 1940 worked for the Violin Hosiery Works at Singu, 12 miles north of Rangoon. An Indian Moslem firm owned the rather modern plant, and one of the members of the family secured his technical training in Japan. Burmese women predominated in the labor force, and staged a very colorful strike about 1939. The total output for the industry in 1938–39 was 262,651 dozen pieces weighing 652,136 pounds.

Woolen mills.—Within Insein's well-populated jail there were, in 1940, some 430 "employees" of the government woolen mill. The output consisted of police and military uniforms. Turnover of employees is believed to have been low. Burma is not a producer of wool on a commercial scale, so the raw material was imported. It is doubtful if this industry could have existed on a strictly competitive basis.

Cotton weaving.—Up to the time of the Japanese occupation there was no cotton weaving in Burma, aside from handloom weaving—chiefly in villages—and a few power looms in Insein and other jails.

ENGINEERING

Dockyards and shipyards.—Burma's largest dockyard was at Dalla, across the river from Rangoon's business district, and belonged to the Irrawaddy Flotilla Company. It, and the company's smaller plants in Rangoon, employed all but 72 of those engaged in the private section of the industry in 1940, and those 72 were in the small Mandalay and Moulmein yards of the same company. The Dalla yards built at least one express steamer for the Prome-Mandalay service, and furnished repairs to medium-sized ocean vessels, as well as to the company's large riverine fleet.

The Rangoon dockyards of the Burma Government, across Pazundaung Creek from East Rangoon, employed 742 workers. After the outbreak of the European war, these yards commenced the building of 105-foot motor mine sweepers, as well as Fairmile antisubmarine launches and Thornycroft motor launches.

The *Rangoon Times* published a glowing account of the ship-building industry in its August 24, 1941, issue, stating that employment at the Government Dockyard was over 900.

Prior to the 1940-41 spurt, however, shipbuilding in Burma was of very little importance, as shown from the following tabulation which lists in long tons the number of vessels built at Burma ports.

	1935-36	1936-37	1937-38	1938-39	1939-40
Rangoon	12	...	1,645	226	124
Moulmein	238	...	270	...	...
Totals	250	...	1,915	226	124

The Dalla and Government yards were the subjects of particularly effective demolition and subsequent bombing during 1942-44. However, a large number of 45- to 60-foot wooden vessels were under construction by the Japanese in late 1944. Most activity was at the Government yards.

General engineering.—The well-known firms of Irrawaddy Flotilla, Burnmah Oil Company, and Burma Corporation had most of the general engineering establishments. The largest foundry was that of the Irrawaddy Flotilla Company in Ahlone, West Rangoon, with 931 employees in the busy season. The same company had a smaller foundry, with 120 employees, in East Rangoon, across the Pazundaung Creek from the Government Dockyard. Two large workshops each in Yenangyaung and Chauk catered to the needs of the oil fields, and employed a total of one thousand employees. In addition, there were large workshops at Namtu, in connection with the Burma Corporation's smelters and ore-dressing plant, and smaller workshops at Mawchi Mines and elsewhere.

Ordnance.—Rangoon arsenal was expanded after the outbreak of war in Europe, and had 516 employees in 1940—probably many more in 1941. It was situated in the Mingaladon Cantonment, north of Rangoon.

Railway workshops.—The chief workshops of the Burma Railways were at Insein, near Rangoon, and at Myitnge, near Mandalay. Employment at Insein was 1,316 in 1940, and in

both World Wars these shops turned out various ordnance items for the equipment of British forces. Approximately 200 locomotives were repaired annually at Insein. The Myitnge workshops concentrated on construction and repair of freight and passenger vehicles, using Burma's excellent teakwood freely. Normal annual production was about 500 four-wheeled freight "waggons" and 30 medium-sized passenger carriages. About 2,500 freight cars and 600 passenger vehicles were repaired annually. The adjoining power station had a capacity of 1,150 kilowatts.

There were minor railway repair shops at Martaban, P'yuntaza, Toungoo, Thazi, Mohnyin, etc., but most of the work for the Burma Railways was done at Insein or Myitnge.

Coachbuilding and motor repair.—In Burma as in most other countries a large part of the motor-repair work was done in workshops too small to be classified as "factories." Only 727 worked in establishments large enough to be included in available statistics, and all but 113 of these were in Rangoon town.

Chassis were ordinarily imported from Canada or the United States, and teakwood bodies built on them in Rangoon.

The outbreak of the war and the opening of the Burma Road found a large number of Chinese-owned body-construction centers in Rangoon. Also, Watson & Son, a British firm, had a large assembly plant. The Burma Road was responsible for this sudden growth of a new industry.

Electrical power, engineering, and transforming.—A United States Department of Commerce publication in 1937 listed 106 power plants in Burma, several under 10 kilowatts in capacity, and six over 1,000 kilowatts. The largest was the Burmah Oil Company's Yenangyaung plant with a capacity of 20,000 kilowatts. This plant, like the 16,500-kilowatt plant of the Rangoon Electric Tramway and Supply Company supplied alternating current, but the great majority of the plants supplied direct current on a voltage of 220, with oil engines as the source of power. The third largest plant was that at Mansam, near Namtu, with a capacity of about 10,000 kilowatts.

Many of the electric plants in Burma were adjuncts of

mines and factories. For instance, the Bombay Burmah Trading Company's modern sawmill at Rangoon used sawdust as fuel for the production of electricity in its 820-kilowatt plant, also in Rangoon.

Naturally, the demolition squads paid particular attention to electric-power plants in the spring of 1942 and all the larger plants were rendered useless, at least temporarily. Repairs were made in the oil fields, near Nanttu and in Rangoon, however, and in 1943 and 1944 the Japanese were getting a small proportion of the former output of electric power. The Rangoon Electric Tramway plant, for instance, was in use in the fall of 1944, but Allied bombing and Japanese demolition put it out of operation before the British forces reoccupied Rangoon in May 1945.

Up to the present time electric supply has been restored only partially in Rangoon and most district centers. American lend-lease generators helped provide a minimum of power for Rangoon, but are inadequate to restore full production.

Tramways.—The Rangoon Electric Tramway and Supply Company had a small system in Rangoon, and after 1937 it added a rather efficient trackless tram system. Its Ahlone works employed about 300 persons. Mandalay had a small tramline, with about 50 employees in its workshop.

ORE-TREATING MILLS

The statistics given in Table 21 of four ore-treating plants with 105 employees, are highly misleading. They relate to ministerial Burma⁵ and do not include the Shan States, where the Bawdwin Mine and the Nanttu refineries and ore-dressing plant are situated. Nor are the important facilities of the Mawchi Mines included, as they are located in Karenni.

ALUMINUM

Aluminum sheets were imported from India and elsewhere. More than half the 258 employees of "metalware factories" worked for Messrs. Jeewanlal, Ltd., an Indian firm with a plant along colorful and "smellful" Insein Road. This plant

⁵ Formerly "Divisional Burma" or "British Burma."

was believed to have operated under Japanese supervision, producing a variety of metal items.

SUGAR REFINERIES

Burma's largest sugar mill is at Zeyawaddy, 139 miles north of Rangoon on the main railway line. The land in the vicinity was made over to the Sinha family in the last century and famine refugees from Bihar, in India, were settled there. Paddy has been their chief crop, but part of the grant has been planted to sugar cane in recent years, with the erection of the refinery. However, it is doubtful if sugar cane does as well at Zeyawaddy as in Toungoo and Yamethin districts, farther north. Since the erection of the refinery, about 1930, the 800-odd workers at the peak of the season come largely from near-by farms, and have usually been Indians. This refinery, together with the somewhat smaller mill of Messrs. Finlay Fleming and Company, in Myitkyina District, produced 38,252 long tons of white sugar in 1940-41.⁶

Burmese farmers throughout Toungoo, northern Pegu, and southern Yamethin District grow considerable quantities of sugar cane for shipment by rail to Zeyawaddy. However, their production chronically outran the capacity of the mill, and by 1940 it was necessary to convert considerable quantities of sugar cane into *kyantaga* or *jaggery*, a substance somewhat similar to brown sugar, in order to prevent waste. A bullock-powered crusher and a few pans sufficed to make *kyantaga* in the midst of the field. The cane, after crushing, is used for fuel.

The Ensuike Company, thought to be a Mitsui subsidiary, resumed operations at Zeyawaddy. In September 1944, Indians in and around Zeyawaddy were about as numerous as in the prewar period. For a time operations were continued at the Sahmaw (Myitkyina) plant of Finlay Fleming, but repeated bombing stopped all activities. When Sahmaw was reoccupied by Allied troops in the early autumn of 1944 it was found that the laboratory and "sugar end" of the factory were destroyed. It was thought possible that it would be more satisfactory

⁶ *Burma Trade Journal*, October 1941.

to erect a new factory than to attempt to recondition the much-bombed Sahmaw factory. The Hninpale plant, a much smaller refinery in Thaton District, may have reopened operations in 1943-44, under the control of the Nippon Sugar Manufacturing Company. The Zeyawaddy factory is in nearly full production at present, but the other two factories are not operating.

Total white sugar consumption in Burma was estimated at about 48,000 tons, so the country was nearly self-sufficient when both plants were operating at full capacity, and would have been quite self-sufficient if Hninpale had also been operating efficiently.

MINOR FOOD INDUSTRIES

Rangoon had three flour mills, which processed Australian wheat. In addition to the North Indian and European population which ate bread regularly, Burmans often consumed cakes made of wheat flour. Employees at the flour mills numbered 146. There were three bakeries in Rangoon large enough to come within the purview of the Factories Act.

Burmans with Western education usually partook of alcoholic beverages, but the great majority of Burmans adhered to their Buddhist principles and were total abstainers. The Moulmein and Mandalay breweries, therefore, catered mainly to immigrants, and were not very large or important. The use of aerated (soda) waters was fairly common in towns and along the railway, and Messrs. DuBern & Company, a Franco-British firm, had a large plant in Rangoon. Ice was another product of fairly general use by urbanites, particularly the more well-to-do, and was manufactured chiefly by DuBern & Company.

The Japanese reportedly commenced the manufacture of *saki* with 7 percent alcoholic content.

CEMENT

Steel Brothers & Company was well represented in the Burma cement industry—in fact they *were* that industry,

through their subsidiary, the Burma Cement Company—the Thayetmyo plant of which supplied 93.05 percent of the country's domestic consumption in 1939–40 and exported about 7,000 tons to Malaya and other Far Eastern countries.⁷ Dalmia Cement from India was imported in considerable quantities in 1941. The Dalmia company did not belong to the Indian cement cartel, of which the Burma Cement Company was a member.

The plant was situated at the southern outskirts of Thayetmyo, on the Irrawaddy, and was connected with the quarry by a two and one-half mile railway. The power plant and the kilns used natural gas from near-by oil fields. These fields were controlled by the Indo-Burma Petroleum Company, another Steel Brothers enterprise. Annual capacity of the plant was about 60,000 long tons. The rotary kiln, silos for cement slurry, and storage bins were all very modern, and competent European engineers were in charge.

The Burma Cement Company was a member of the Indian cement cartel, and therefore exported no cement to India. Mr. Tait, in his presidential address at the end of 1940, pointed with pride to the use of his company's cement in Rangoon's latest arterial highway, and hoped for the building of more roads of this superior type. Regarding financial operations in 1939–40, Chairman Tait stated:

After making provision of Rs.360,000 for depreciation of plant, writing off from quarry development account Rs.33,190/4/11, and making adequate provision for income tax and super tax, there remains at the credit of Profit and Loss Account the sum of Rs.522,585/14/1, and providing you confirm the recommendation made by your Directors of the payment of a dividend of Rs.1/- per share, there will remain to be carried forward to 1940–41 a balance at the credit of Profit and Loss Account of Rs.179,585/14/1 as against Rs.177,115/7/8 brought forward from 1938–39.

The labor force at the Thayetmyo plant was about half Indian and half Burmese.

⁷ Mr. John Tait (now Sir John Tait), President of the Burma Cement Company and head of the Rangoon office of Steel Brothers, at the fifth annual general meeting reported in the *Rangoon Times*, December 31, 1940.

Allied demolition and bombing sufficed to prevent the Japanese from making much use of the plant, but by the same token, it is believed that Steel Brothers will have to import considerable machinery to resume operations.

Burma was more than self-sufficient in cement, as exports were approximately twice as great as imports, both in 1938-39 and 1939-40.

RUBBER

In spite of the fact that Burma is one of the minor rubber-exporting countries of the world, rubber manufacturing has always been very small. The two rubber factories in the northern outskirts of Rangoon had but 389 employees in 1940. One factory, founded in 1936, produced about 4,000 pairs of rubber-soled canvas shoes and 12,500 pairs of all-rubber shoes monthly. Rubber consumption was 18 long tons of raw rubber monthly. The other factory used 4 or 5 tons of raw rubber monthly, and produced rubber blocks (bricks) and balls for use in rice mills. The products of these factories were used almost entirely within Burma, and were supplemented by very extensive imports of rubber products of all kinds.

Under the Japanese, one of these factories expanded operations with numerous Japanese technicians to guide the Indian laborers. It manufactured crepe-rubber bicycle tires, rubber belting, and boots and shoes for the armed forces.

The Burma Rubber Works of Kamayut advertised in September 1946 that it manufactured: "Canvas and rubber shoes, rice mill bricks, motor tyre compound, rubber stamp compound, all sorts of rubber washers, and rubber stoppers for bottles."

MATCHES

The well-nigh universal use of the cheroot makes the match problem in Burma a very pressing one. An Indian, Adamjee Haji Dawood, built a modern match factory in northeast Rangoon and employed about 1,400 of the 2,100 workers engaged in Burma's five match factories. Exports from Burma (largely from the Dawood mill) in 1940-41 amounted to 2,653,000 gross of boxes. Burmese woods were used for splints, although

they are far inferior to woods from the North Temperate Zone.

The only other factory of any size was that of the Burma Match Company, believed to have been associated with the group of factories in India formerly allied with the Swedish Match Trust. Its factory, down the Rangoon River approximately opposite the Indo-Burma Petroleum Company's Thilawa Refinery, was never as modern as the Dawood factory. Kemmendine, Akyab, and Mandalay had the other small match factories.

Lack of chemicals, transport, and machinery prevented the match factories from being of much help to the Japanese. Instead, there grew up a fairly flourishing trade in automatic lighters, made in homes and small workshops. In 1946 there was some protest against excise duties on home-produced lighters, which may indicate that the market for matches may have been permanently affected by the war.

Unlike most Burma industries, Burmese employees were in the majority, even in the Adamjee Haji Dawood factory. This was perhaps largely due to the necessity of employing large numbers of women for the handwork of filling the boxes, etc., and the absence of a large class of Indian laboring women.

MISCELLANEOUS INDUSTRIES

The starch factory started in the northeastern outskirts of Rangoon shortly before the outbreak of war in Europe appears to have been fairly important, with 233 employees and a modern-appearing plant. The vegetable-oil mills crushed the groundnut, cottonseed, and sesame of perhaps 2,000,000 acres. However, many a villager had a home-made device, operated with bullock power, for crushing oilseeds. For this reason it is not known what proportion of the 200,000 long tons of groundnut or fifty to sixty thousand tons of sesame seeds was crushed by the 29 "factories" with their 1,513 employes. The larger of these mills, such as that at Allammyo, opposite Thayemyo, were operated by the ubiquitous Steel Brothers.

The largest printing presses were all in Rangoon—those of the Government of Burma, the American Baptist Mission,

and the four leading newspapers. In addition to the presses listed in the statistics cited earlier in this chapter there were numerous workshops too small to come within the scope of the Factories Act. For instance, by operating a typesetting plant in one hole-in-the-wall, a printing press in a second, and a bindery in a third, it was possible to operate a fair-sized business without maintaining the minimum standards required by the Factory Act.

The leather and shoe factory was in Insein jail, and like the woolen mill its customers were the military police and other government agencies.

Other factories manufactured rope, quinine, soap, pottery, umbrellas, and other commodities for the local market, although ordinarily supplying but a small part of total consumption. Some were located in the well-populated jails, and there is a story (probably untrue) that when a large order for wood-carving was received by a certain jail the police would bring in the jail's most skilled "alumnus," to reside there until the order was filled! At any rate, the jails deserve credit for making a considerable contribution to the technical skill of Burmese craftsmen.

THE JAPANESE PERIOD

Comments have been made above as to Japanese operation of rice mills, power plants, and numerous other factories. In general, it may be said that industrial production appears to have fallen drastically during the Japanese occupation, owing to a number of causes, of which the chief were perhaps the following: (a) Allied demolition before withdrawal; (b) Allied bombing attacks; (c) evacuation of Indian, European, and Anglo-Indian engineers, and skilled and unskilled labor; (d) lack of imports of coal, chemicals, machinery, spare parts, etc.; (e) lack of transport facilities; (f) lack of fuel; and (g) inflation, food and clothing shortages, and inability to offer sufficient incentive to laborers.

Against these handicaps must be set the Japanese desire to make Burma as self-sufficient as possible, and as satisfactory a

base as possible for the "Drive to Delhi." The enthusiasm of Burmese nationalists was whipped up by grandiose schemes for a truly indigenous industrialization, and as late as July 1944 the Japanese government announced a course of three months' training for fifty young Burmans in electricity, soap-making, tanning, engineering, carpentry, and extraction of petrol from rubber. A few months earlier there was an advertisement for moulders to work iron and copper for the Maruin K.K. at Thamaing, between Rangoon and Insein. The laboratories of the Mandalay Agricultural College were praised as the basis of new industries, while success in the manufacture of pulp, soap, cotton gauze, and particularly of textiles, was announced from time to time.

In one area in Upper Burma the Japanese set up a slaughter-house, a tannery, a piggery, and a textile trading company.

There is no doubt that practically all companies producing minerals, and most other industries of any importance were either taken over by the Japanese completely, or, as in the case of the U Thaw Pottery Works, required to accept Japanese "partners."

Japanese firms attempted to manufacture a large variety of goods for their army, including cotton blankets, caustic soda, soap, hardware, small arms, and shell cases. Intensified Allied bombing, plus a very effective blockade and the destruction of railway and other forms of land transport, brought most such operations to a standstill even before the Japanese evacuation. The Japanese removed many generators and other essential parts of machinery; and after their evacuation and before the arrival of the British, looting further complicated the problems of those who were later to attempt to restore industrial production.

INDUSTRIAL REHABILITATION

By June 1946 some 500 rice mills were in operation--three-fourths of the prewar number. With rice production less than 40 percent of normal, however, it is obvious that most mills were not producing cleaned rice at the prewar rate.

The chairman of the Timber Project Board explained in May 1946 that at the time of reoccupation some 60 percent of Burma's sawmills were destroyed or ineffective, the remainder being in a poor state of repair.⁸ The official report of the Board for May 1946 gave the following encouraging information:

There are signs that the supply position should ease in the fairly near future. The rehabilitation of Messrs. the B.B.T.C.L. Dunneedaw Sawmill is now almost complete and the mill should come into operation in early June. This should materially improve the quantity of timber available in the Rangoon area.⁹

It will be noted that the sawmills were restored much more slowly than the rice mills, for Rangoon was reoccupied early in May 1945. The Bombay-Burmah Trading Company sawmill at Dunneedaw was the largest in Burma.

In June 1946 it was reported that "a local match factory is being encouraged to start production as soon as possible in order to help meet the shortage of matches in Burma."¹⁰

BURMESE INDUSTRIAL POTENTIAL

As Burmans have amply demonstrated their ability to handle and repair machinery, there appears to be no reason why local labor may not be found for any probable degree of industrialization. Burmese capital, on the other hand, is almost wholly lacking, and future industrialization would seem likely to involve either the continuation of large-scale foreign investments and control or a great extension of state enterprise with borrowed funds. A compromise might be the admission of foreigners as junior partners in state or private firms, the former furnishing patents, machinery, and technicians in return for a minority interest. Some American concerns have assisted in the setting up of companies in other underdeveloped countries where public sentiment would frown upon new out-and-out foreign enterprise.

⁸ *The Burman*, May 17, 1946.

⁹ *Ibid.*, June 18, 1946.

¹⁰ *Ibid.*, June 11, 1946. Encouragement was being provided by the Government of Burma in an unspecified manner.

The difficulty of persuading Burmans to invest in industry is great. In the Conservative *Blueprint for Burma* of 1944, there occurs the passage:

One case was presented to us where a British firm, establishing a cement company, deliberately fixed the shares at the figure of ten rupees and appointed a Burman on the directorate, but the response of the Burman investor was negligible, in spite of a large block of shares having been reserved for subscription by Burmans.

It may be argued that Burmans would invest more readily in shares of distinctly Burmese companies, but it is difficult to see how they can acquire the necessary experience to manage such concerns successfully without first associating themselves with existing companies, or employing foreign technicians for rather long periods at high salaries.

In the absence of deposits of iron, and of definitely proved deposits of commercially workable coal, "heavy industry" does not seem likely to be located in Burma. However, the petroleum industry, with abundant natural gas as a by-product, may perhaps assist future industrialization. Hydroelectric power undoubtedly could be developed in the mountains, but not, it appears, near the large port cities where manufacturing has hitherto been concentrated.

As to industries which may be developed to a greater extent in the future than in the past, every student of Burma economy probably has his own list. Some possibilities tentatively put forth are:

Cotton textiles.—This industry appears able to thrive in most countries of the world, although it sometimes requires tariff protection. In 1941 the foundation was laid for the protection of Burmese industry from Indian competition. Burma has the raw cotton, the labor, the market, and a little experience for such an industry.

Rubber goods.—Tennis shoes are extremely popular, and considerable quantities are imported. If the textile industry expands so as to be able to provide canvas at a reasonable price, all products will be of local origin. If, of course, the textile industry requires a very high tariff, the rubber goods industry

will be penalized thereby. Presumably chemicals used in rubber manufacture will need to be imported.

Canned fruits, vegetables, and milk.—Considerable quantities of "oilmanstores" were imported annually, and many prosperous Burmans began feeding their children on hygienic imported milk. The Shan States have large areas quite suitable for dairying as well as for the growing of the fruits and vegetables common to the temperate zones. Why should Burma always have to import such canned goods from Australia, America, etc., paying double the price in those countries because of the long freight haul and extra middleman's profit?

Paper.—With vast areas covered with fast-growing bamboo, Burma should be able to manufacture paper at competitive costs.

The list might be expanded indefinitely, and there are doubtless other industries which would be found, on further study, to be more suitable than one or another of those just mentioned. Burmans, like nationals of most other countries which were introduced late to world economy, appear unwilling for their country to continue indefinitely as a source of raw materials for other countries, while importing practically all of its manufactured commodities. They have noticed that the wealthier and more powerful countries of the world are the ones with the largest industries in the great majority of cases. Arguments about lack of coal and iron, of capital and of industrial experience may be brushed aside with reference to the industrial development of Italy, Japan, and numerous other countries which at first did not seem "favored" by nature for industrialization.

PUBLIC VS. PRIVATE OWNERSHIP

Prior to the war, private ownership was the rule in Burmese economic life, only such utilities as the railways, postal services, and telecommunications being publicly owned. On September 19, 1946, however, the official *New Times of Burma* published a statement to the effect that the Government had decided to restore electric supply on a nationalized basis. The plan included: (1) "the enactment of legislation authorising the

establishment of an Electricity Supply Board; (2) "the appointment of a specially qualified engineer . . . to act as Executive Officer of the Board"; (3) standardization of equipment, etc., and (4) installation of generator sets of 25 to 100 kw. capacity, producing single- and three-phase alternating current of 230/400 volts.

Although the avowed Communists have been expelled from Burma's leading party, and are not at present represented in the cabinet, some of the leading Burmese politicians have stated their beliefs in socialistic and even communistic principles. It is therefore not unlikely that Burma's industrialization will involve a large measure of public ownership and management.

Public statements by responsible Burmese leaders, however, give no hint of a program of confiscation or prohibition of foreign investment. On the other hand, there appears to be a desire to encourage industrialization by all feasible means, provided foreign investment does not involve unwanted foreign economic control of Burmese life generally.

XI

EXPORTS

GENERAL NATURE

TWO-THIRDS to three-fourths of Burma's total exports, by value, consisted of two items—rice and petroleum. Nearly nine-tenths passed through a single port—Rangoon. Three-fifths of Burma's exports went to a single country—India. These three characteristics: (1) predominance of one or two export products, (2) shipment through one or two ports, and (3) shipment mostly to a country with which there are political ties—are fairly typical of colonial areas in southeastern Asia. In Malaya, for instance, tin and rubber are outstanding as exports, and Singapore and Penang as ports, although Malaya's relatively free-trade regime prevented British Empire countries from having a lopsided share of the colony's trade. French Indo-China, on the other hand, sent nearly 60 percent of its exports to France and to the other French colonies.

Following rice and petroleum products, Burma's other chief exports, in order of importance, were: teak and other woods, lead, wolfram, tin, vegetables (including beans and potatoes), raw rubber, raw cotton, cattle hides, matches, zinc, and copper. It will be noted that raw and semifinished products predominated. Petroleum products and matches were the only commodities in the foregoing list which were exported in finished form. The teak, metals, rubber, cotton, and hides, however, were necessarily given preliminary treatment prior to export. Official export statistics have been used to compile Table 23 showing exports for the last four prewar years:

TABLE 23

EXPORTS OF PRINCIPAL COMMODITIES*

(Years ending March 31)

Commodity	Unit	Quantity				Value (in thousands of dollars)†			
		1937-38	1938-39	1939-40	1940-41	1937-38	1938-39	1939-40	1940-41
Domestic exports									
Rice	Million lbs.	6,368	6,781	6,947	6,245	187,287	171,627	172,937	165,383
Bran	Long tons	391,119	382,989	254,172	189,341	78,285	76,056	78,108	81,539
Petroleum products						6,222	5,911	3,041	962
Kerosene	1,000 bbls.	3,755	3,533	3,967	124,921‡	26,723	24,556	24,346	20,470
Paraffin	1,000 lbs.	111,527	88,807	125,928	108,916	7,842	5,980	7,927	9,223
Lubricants	1,000 bbls.	199	149	227	18,301‡	2,873	2,256	2,951	4,721
Other	1,000 bbls.	1,953	1,823	2,010	2,475‡	12,025	10,350	10,312	433
Teakwood	1,000 cu. ft.	11,278	10,180	11,222	209,770§	13,072	10,624	9,956	8,745
Other wood						1,516	1,680	1,963	1,041
Lead	1,000 lbs.	191,696	197,680	178,298	115,847	10,542	8,903	8,209	6,121
Woolfram ore|| .....	Long tons	10,147	10,690	12,145	10,282	7,519	7,327	7,618	5,755
Tin ore|| .....	Long tons	2,785	2,938	3,462	5,513	2,028	1,848	2,255	3,532
Vegetables, beans, and potatoes	Long tons	118,171	124,012	152,817	113,931	3,612	3,596	4,624	3,231
Rubber, crude	1,000 lbs.	20,850	21,119	22,336	28,456	2,506	2,139	1,603	2,913
Cotton, raw	1,000 lbs.	41,276	37,242	40,273	37,137	3,275	2,711	3,271	2,385
Hides, cattle	1,000 lbs.	16,150	13,181	15,021	14,226	933	636	699	800
Matches	1,000 gross	1,246	1,375	1,633	2,653	433	423	452	708
Zinc concentrate	1,000 lbs.	172,060	146,761	77,220	50,192	1,914	965	486	299
Copper concentrate	1,000 lbs.	16,330	14,414	16,393	4,097	844	527	656	170
All other						5,033	5,139	4,460	12,335
Silver bullion	1,000 std. oz.	6,632	6,399	6,194	6,166	2,359	2,497	2,279	2,431
Re-exports						1,899	2,582	3,210	2,437

* Sea-borne trade only. Land trade was negligible before 1939. Sources: *United States Trade and Navigation, 1937-38, 1939-40, and Foreign Commerce Yearbook, 1937-38.*

† First three years calculated at rupee-dollar exchange rate as reported by American Consulate; 1940-41 rate: \$1 = Rs. 380.

‡ Thousands of imperial gallons.

§ Cubic tons

|| Mixed tin and wolfram ores from Malachi Mines appear to have been classed as wolfram, for statistical purposes. Hence the quantity figures for wolfram should be about a third lower and those for tin should be correspondingly higher.

LEADING COMMODITIES

Rice.—Rice and bran constituted approximately half Burma's total exports from the standpoint of value. In the last full prewar year, 1940–41, they rose to half the total, since export of minerals was considerably curtailed. Although Steel Brothers was the largest single firm in the export of rice, Indian merchants handled over half of the country's total—including much the largest proportion of the rice sent to India.

Burma was outstanding among rice exporters, being responsible for nearly two-fifths of total world exports. Thailand and French Indo-China were the only other countries with over a million tons annual export, and the two of them together exported around three million tons annually, or the same quantity as did Burma. In other words, the three neighboring countries exported about three-fourths of all the rice entering world trade. In each case a rather secure monsoon rain, broad, flat river valleys and deltas, and a not too dense population combined to produce a great surplus over domestic food requirements.

Three-fourths of Burma's normal rice export passes through Rangoon, having reached that port by inland waterway for the most part, although considerable quantities also are sent to Rangoon by rail. "Boat paddy" normally commanded a slightly higher price than "rail paddy" since it ordinarily came from the Irrawaddy Delta, and hence from somewhat richer land and was of better quality. Bassein, Akyab, and Moulmein are the other three rice-exporting ports.

Since paddy was harvested from November to February or March, export took place chiefly in the months of January to May, March being the largest single month. However, exports continued throughout the entire year. A little over half the export consists of "raw rice" or ordinary white rice. Somewhat over two-fifths consists of parboiled rice (particularly for South India, Ceylon, and Malaya), and the remainder of broken rice, etc. Very little unhulled rice, or paddy, is exported.

European, Indian, and Chinese firms are grouped into a Rice Merchants' Association, and customs as to grading, bro-

kerage, etc., are similar to those in common use throughout the world.

Burma has co-operated with the International Emergency Food Commission, a subordinate body of the Food and Agriculture Organization. The I.E.F.C. has "allocated" Burmese exports, chiefly to India, Ceylon, and Malaya, thus following prewar practice. The price received by Burma, around Rs. 400 per long ton, has been far less than the "black market" rate charged by nonco-operating exporters in French Indo-China. Hence there are numerous reports of the unauthorized smuggling of rice from Tenasserim to Malaya, to take advantage of the high prices available in the latter country.

Petroleum Products.—About a fourth of exports, by value, consisted of petroleum products—chiefly kerosene for the lamps of India. Since the Burmah Oil Company was the country's chief producer and refiner of petroleum, it was also the chief exporter to India and elsewhere. Paraffin was the one petroleum product which went mostly to Europe, rather than to India.

Woods.—Teakwood ranked third among exports, and was shipped by the chief European firms mentioned in chapter vii. It is ordinarily shipped in the form of "squares," for further sawing in the country of destination.

Lead, Wolfram, and Tin.—Mineral products, chiefly from the Bawdwin and Mawchi Mines, came next in importance. It is interesting to note that both these great mines are not situated in Burma proper, but in the Shan States and Karenni, respectively. However, export necessarily takes place through Rangoon. Together they made up over 10 percent of total exports. The large European firms responsible for mining also took care of export.

EXPORTS BY COUNTRIES

The following table reproduces official figures for destinations of Burma's exports in the three years 1937-39 to 1939-40. After that time trade was very abnormal, due to war conditions. In October 1941, for instance, total exports were valued at Rs.76,610,000, of which no less than Rs.42,850,000 worth

were destined for India. Other British countries, the United States, and the Netherlands East Indies took practically all the rest. Prewar trade, in thousands of dollars, for years ended March 31, is given in Table 24.

TABLE 24
SEA-BORNE EXPORT TRADE WITH PRINCIPAL COUNTRIES*

Country	Value of General Exports (millions of dollars)			Percent of Total		
	1937-38	1938-39	1939-40	1937-38	1938-39	1939-40
India	96,400	94,600	106,200	51.0	54.3	60.1
United Kingdom	32,000	22,100	23,300	16.9	12.7	13.2
Ceylon	11,200	9,700	9,800	5.9	5.6	5.5
Straits Settlements ...	11,100	9,800	8,100	5.9	5.6	4.6
Japan	4,300	3,100	7,100	2.3	1.8	4.0
Germany	7,200	6,600	2,300	3.8	3.8	1.3
Malaya	2,700	2,300	1,800	1.4	1.3	1.0
United States	400	300	1,700	0.2	0.2	1.0
China	1,000	700	1,400	0.5	0.4	0.8
Others	22,900	24,900	15,100	12.1	14.3	8.5
Totals.....	189,200	174,100	176,800	100.0	100.0	100.0

* *Foreign Commerce Yearbook, 1939, based on Seaborne Trade of Burma.*

Reasons for India's predominant position are: (1) Indian ports were closest to Burmese ports; (2) India is deficient in supplies of rice, petroleum, and teak, whereas Burma has an export surplus; (3) there was free trade between the two countries accompanied by mildly protective tariffs against goods from all other countries; (4) currencies were the same, while the Reserve Bank of India continued to be Burma's central bank, even after separation in 1937; (5) the trade of Burma, both internal and foreign, was largely in Indian hands. Preliminary 1946-47 trade returns show India taking Rs. 62,400,000 of Burma's Rs. 174,200,000 of exports. Hongkong, Malaya, Ceylon, Indonesia, and the United Kingdom followed in that order.

About half the remaining trade of Burma was with other British Empire countries. The ports of Ceylon and Malaya were next closest to Burma after India, and both countries required large rice imports. In general, however, the preponderance of other empire countries in the remainder of Burma's trade must be partially attributed to imperial preference,

growing out of the Ottawa Agreements. This differential in favor of empire countries was ordinarily 10 to 15 percent—sufficient to make considerable difference in many highly competitive lines. Moreover, British firms had a large, if not preponderant, place in many branches of industry, transport, and trade, and their world-wide connections were mainly British. All but a very small part of the ocean-going vessels calling at Rangoon were British, and stopped at British ports around the world wherever possible, so that it was not always possible to ship goods directly to Burma from many non-British countries. Thus part of the reason for Burma's trade orientation toward empire countries was the same as the reason for the orientation of Philippine or Indo-Chinese trade toward the United States and France, respectively, except that political factors, such as tariffs, were much stronger deterrents to world-wide trade relations in the Philippines and Indo-China than in Burma.

Japan did not, before the war, occupy a very important place in Burmese trade. However, Japan supplied a much larger share of Burmese imports than it took of Burmese exports. Only in 1939-40 did the Japanese share in Burmese exports rise to 4 percent, and this was due partially to the curtailment of trade opportunities with Europe, as well as the intensification of Japan's armament program. Japan did, however, purchase considerable cotton, and smaller quantities of a number of other raw materials.

Similarly, exports to the United States were very much smaller than imports from the United States, the former amounting to but a fraction of 1 percent until 1939-40, while imports were around 4 percent of the total.

EXPORTS DURING THE JAPANESE OCCUPATION

With the Japanese occupation, Burmese exports to India and most other leading markets ceased abruptly. Far Eastern countries which were also under Japanese occupation only took a total of 9 percent of Burma's 1938-39 exports—chiefly because many of them exported the same commodities as Burma, or could buy those commodities nearer at hand. Not only the

Japanese, but many among their enemies, expected Burma's natural riches to make a large contribution to the self-sufficiency of the "Greater East Asia Co-Prosperity Sphere." Japanese steamers of 1,000 to 5,000 tons draught took away substantial quantities of teak, rice, looted commodities (automobiles, scientific instruments, electric refrigerators), and lead and other metals already mined and ready for export at the time of occupation. However, by the start of the 1943 monsoon in May, Allied attacks on Japanese shipping throughout the whole of Far Eastern waters caused few large Japanese vessels to continue to make the long run around Singapore to Burma. Thereafter, export on a greatly reduced scale took place in small wooden vessels. All in all, Burma contributed surprisingly little to the Japanese war machine in the way of exports—thanks largely to Allied submarines and aircraft.

BURMA'S POSTWAR EXPORT PROSPECTS

The first two years of peace have witnessed a world-wide scramble for cereals, including rice, and for building materials such as teakwood. It is unfortunate that Burma was so ravaged by war as to be unable to export more than half a million tons of rice in 1946 (against a normal export of over three million tons) and very little teakwood. Lead, petroleum, and other Burmese exports have also been in great demand on the world market, and there is little prospect of any of Burma's leading exports failing to find a ready market for the foreseeable future unless, of course, there ensues another world business depression. It is now certain that 1947 and subsequent rice exports will greatly exceed 1946 exports, although the normal figure may not be approached for several years. No safe prediction can be made at this time as to when Burma's mineral exports will return to normal. However, the minerals are still there, and they may be exported after a few years when the market may be quite receptive, if not as much of a "sellers' market" as in the immediate postwar period.

The teak forests seem capable of providing the prewar volume of production for an indefinite time. Thus, the sub-

stantial completion of the rehabilitation period should release large quantities of teak and permit normal exports. The long chain of production, reaching back to the girdling of trees in far-away forests, as well as the rebuilding of destroyed saw-mills in Rangoon and Moulmein, was started soon after reoccupation and seems likely to measure up to milling capacity as fast as the mills are restored.¹ Presumably there will be found some logs in process of transport to the seaports, and some trees already girdled, but available information suggests that the Japanese have not left the forests as much of a going concern as they found them. Rehabilitation needs in India and elsewhere should provide a steady market for Burma teak, along with India's vast industrialization program.

Burmese nationalism may possibly call for a vigorous program to increase manufactures, and it is possible that such a program will interfere with exports. This is not very likely, however (except perhaps as a cotton textile industry uses local supplies of cotton, leaving little or nothing for export); for any measure of industrialization will call for imports of machinery, and substantial exports will be required to pay for the machinery as well as for the foreign technical skill necessary to set it properly in motion and train Burmese engineers and operatives. The only other possible handicap to exports deriving from industrialization is the bare possibility that the decline in imports consequent upon home manufacture of consumer goods will prevent foreign nations from having sufficient Burma exchange with which to buy Burmese exports. In view of Burma's need to import machinery for a long time to come, however, this latter possibility seems remote. Her natural resources are not such as to facilitate a well-rounded industrialization program, and it is to be expected that Burma will continue for a long time as a major exporter of raw materials and an importer of manufactured goods, even though there is a very considerable increase in the production of Burmese factories.

¹ Lawlessness, including wholesale theft of teak as the logs float down the rivers has proved an effective deterrent to resumption of normal production. It is to be hoped that the recent solution of major constitutional issues will promptly result in restoring law and order, for the benefit of the timber industry as well as Burma generally.

XII

IMPORTS

GENERAL NATURE

BURMA's imports consisted chiefly of manufactured commodities, particularly cotton yarn, thread, and piece goods, which amounted to between 15 and 20 percent of the total. Other consumption goods included practically every manufactured item common to international trade, with tobacco, minor food products, other textiles, and items of clothing making up the greater share. Goods destined for use in Burma's factories, mines, railways, and oil fields also bulked large among imports—with iron and steel, coal and coke, machinery of various kinds, chemicals, and fuel oil as the leading items.

Consumer goods came chiefly from India,¹ and were handled by a series of Indian firms from factory to the ultimate purchaser in almost any Burmese bazaar. Rangoon was the only important port of entry for such goods, and Indian firms along Mogul Street, for instance, did a surprisingly large business with no showrooms and only the most modest offices. They normally had no advertising staffs or programs in the American sense and did not undertake market research. Their outlets were large numbers of small shops throughout the bazaars of the country, and the shops would normally buy a number of different commodities through a single importer.

Capital goods and products for industrial use ordinarily came from Europe, with the United Kingdom furnishing

¹ In many cases European goods were imported into India and manufactured or assembled there (e.g., motor vehicles), after which they were re-exported to Burma. Nevertheless, Indian merchants handled most such items except motor vehicles.

large share. Chief among the items from the United States were motor vehicles. British importers ordinarily handled imports from Europe, and often from the United States as well. The Chinese were prominent as importers of goods from China and southeast Asia, and there were many small Chinese merchants throughout the country who provided a natural outlet for such goods.

One outstanding characteristic of prewar Burmese imports was the high proportion of most items which was consumed by foreigners, or by industries, etc., owned by foreigners. This was chiefly because most Burmans lived in rather primitive rural surroundings, using very little from the outside world except cloth. Prosperous urban Burmans, although few in number, were quick to use a wide variety of imported consumer goods and there is no doubt that modernization of Burmese economy, with Burmans profiting by economic progress, would enable them to provide a broad and expanding market for imports.

IMPORT STATISTICS BY COMMODITIES

Table 25 (pp. 174-75) shows the trend of imports of commodities, in order of importance, for the last four prewar years. The 1939-40 and 1940-41 columns have been added to the two previous columns, the former having been taken from the *Foreign Commerce Yearbook* of the United States Department of Commerce. Conversion to dollars was at the current average rate. Trade across land frontiers, which was negligible prior to 1939, is not included.

Cotton textile and yarn imports tended to increase somewhat in the prewar years, yarn having taken a particular spurt in 1940-41. Although efforts were made to exclude transit trade relating to the Burma Road from the 1939-40 and 1940-41 figures, it was probably impossible to achieve this object completely, since some commodities must have been purchased within Burma for export to China via the Burma Road. Cotton textiles and yarn were certainly included to some extent in this new aspect of trade; thus Burma's net imports may

have been somewhat less than the foregoing figures would indicate.

Jute—all from India—was used chiefly for the bagging of a portion of Burma's rice crop. Burmese soil and climate may have been fairly suitable for jute growing, but Burmese labor would probably not care for the unpleasant work involved. Hence Burmese production of this commodity was practically nil.

IMPORTS BY COUNTRIES

British Empire countries supplied 80 percent of Burma's total imports, India and the United Kingdom supplying about 50 percent and 20 percent, respectively. Table 26 (p. 176) shows, for 1937-38 to 1939-40, total trade in thousands of dollars, and the percentage of the leading countries.

Comparing the foregoing table with the exports contained in Table 24 above (p. 167), it will be seen that India and the United Kingdom figured to about the same extent in Burma's imports and exports, so far as percentages are concerned. The Straits Settlements, however, purchased a much larger proportion of Burma's exports than they supplied of Burma's imports. Conversely, Japan and the United State were fairly important suppliers of Burma's imports but took a relatively small portion of that country's exports. Perhaps this may be explained by the considerable distances between those countries and Burma by sea, coupled with the fact that each found nearer sources of the rather bulky raw materials exported by Burma, whereas each offered specially manufactured commodities which usually combined rather high value with small bulk, and which were hence better able to bear the sea freight rates. Also, Japanese and American manufacturers, in certain cases, were of types and qualities not readily available to Burma from other sources.

IMPORTS DURING THE JAPANESE PERIOD

The Japanese period represented a drastic curtailment of imports, amounting to cessation of supply of many items. Avia-

TABLE 25

IMPORTS OF PRINCIPAL COMMODITIES*

Commodity	Unit	Quantity					Value in Thousands of Dollars				
		1936-37	1937-38	1938-39	1939-40	1940-41	1936-37	1937-38	1938-39	1939-40	1940-41
General imports							83,403	89,306	74,589	80,730	90,464
Milk, condensed	1,000 lbs.	19,730	22,231	.....	.....	.....	1,441	1,688	1,613	1,627	832
Fish	1,000 lbs.	30,421	26,795	24,466	24,465	18,479	2,278	2,225	1,874	1,648	1,430
Wheat flour	1,000 bbls.	307	314	325	345	361	1,490	1,656	1,366	1,211	1,483
Vegetables, etc.	.....	.....	.....	.....	.....	.....	556	947	1,532	1,145	857
Fruits and nuts (except oil nuts)	.....	.....	.....	.....	.....	.....	1,215	1,227	863	760	786
Tea	1,000 lbs.	8,406	7,853	4,034	2,747	3,203	725	1,364	428	692	918
Betel nuts	1,000 lbs.	35,860	31,205	27,372	31,264	33,727	1,442	1,288	1,289	1,128	1,063
Sugar	1,000 lbs.	59,758	31,628	19,275	18,422	17,913	1,970	947	641	418	616
Liquors	.....	.....	.....	.....	.....	.....	979	1,197	775	772	716
Tobacco, unmanufactured	1,000 lbs.	13,132	14,361	14,687	14,688	15,879	877	865	821	832	920
Cigarettes	1,000 lbs.	2,688	1,548	1,224	1,230	1,988	2,288	2,131	1,930	1,763	2,583
Footwear	1,000 pairs	1,949	2,005	1,553	1,533	1,425	514	564	448	507	527
Rubber manufactures	.....	.....	.....	.....	.....	.....	579	721	608	772	1,612
Cotton manufactures	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yarn	1,000 lbs.	12,429	11,324	16,564	22,328	47,405	2,344	1,532	3,621	3,946	7,677
Thread	1,000 lbs.	526	740	564	535	714	506	566	415	432	518
Piece goods	1,000 yds.	159,840	168,916	137,244	178,497	173,676	12,475	14,579	10,451	12,138	12,655
Jute bags and sacks	1,000	55,583	52,439	59,218	52,355	52,363	4,555	4,491	4,780	5,765	5,366

Textiles .....	.....	.....	.....	.....	4,563	5,857	3,155	5,823	6,377
Other wearing apparel .....	.....	.....	.....	.....	1,966	1,395	958	1,181	9,055
Paper and manufactures	1,000 lbs.	35,195	43,580	42,405	29,393	1,061	1,701	1,366	1,441
Coal and coke	Long tons	313,122	356,968	423,338	354,216	1,765	2,213	2,626	2,006
Fuel oil .....	.....	.....	.....	.....	2,111	1,762	1,165	1,358	879
Lubricating oil	1,000 bbls.	22	30	26	22	350	584	472	495
Iron and steel	Long tons	53,429	60,248	45,598	74,378	3,850	5,505	4,196	4,931
Nonferrous metals .....	.....	.....	.....	.....	649	748	629	480	777
Machinery:									
Electric .....	.....	.....	.....	.....	1,055	1,451	1,644	1,616	1,457
Mining .....	.....	.....	.....	.....	2,377	2,218	1,395	1,800	3,218
Other .....	.....	.....	.....	.....	2,819	2,965	2,545	2,332	2,417
Metal manufactures .....	.....	.....	.....	.....	2,808	3,390	2,179	2,651	2,772
Motor vehicles	Number	965	2,251	1,772	1,945	720	2,026	1,482	1,594
Oilseeds	1,000 lbs.	17,438	27,825	37,051	32,686	602	850	950	752
Vegetable oils .....	.....	.....	.....	.....	1,935	1,905	2,066	2,303	3,070
Chemicals and related products .....	.....	.....	.....	.....	2,339	3,387	3,288	3,719	3,959
All others .....	.....	.....	.....	.....	15,859	13,361	11,055	10,829	13,758

Sources: *Seaborne Trade and Navigation and Foreign Commerce Yearbook*, 1938-39. The Burmese Government has kindly made available preliminary 1946-47 figures, showing imports of private merchandise for the five months ended February 1947, valued at Rs. 89,735,000 (One rupee equals about 30 cents in United States money). Textiles made up over 16 percent of the total and petroleum and coal and coke were the other leading imports.

tion gasoline was imported from the Netherlands East Indies, and munitions and certain special footstuffs for the Japanese army were imported via the Burma-Siam Railway, even after Allied submarines and bombers had virtually closed the sea lane to Singapore and Japan. Practically nothing was imported for

TABLE 26
SEA-BORNE IMPORT TRADE WITH PRINCIPAL COUNTRIES*

Country	Value of General Imports (thousands of dollars)			Percent of Total		
	1937-38	1938-39	1939-40	1937-38	1938-39	1939-40
India	43,900	40,200	44,700	49.15	53.89	55.33
United Kingdom	18,000	14,000	13,900	20.15	18.17	17.20
Japan	7,800	5,100	6,500	8.74	6.83	8.04
United States	3,900	2,700	4,700	4.37	3.62	5.82
Straits Settlements ...	2,300	2,300	2,100	2.58	3.08	2.60
Hong Kong	1,100	1,100	1,200	1.23	1.48	1.49
Netherlands	1,700	2,000	1,100	1.91	2.68	1.36
Germany	2,900	1,700	1,000	3.25	2.28	1.24
Belgium	1,400	1,000	900	1.57	1.34	1.12
China	200	200	400	.22	.27	.49
Ceylon	300	200	200	.33	.27	.25
Other countries	5,800	4,100	4,100	6.50	5.49	5.06
Totals.....	89,300	74,600	80,800	100.0	100.0	100.0

* *Foreign Commerce Yearbook, 1939*, based on *Annual Report of the Seaborne Trade of Burma*. From October 1946 to February 1947 India supplied 41 percent of Burma's imports of private merchandise, against 34 percent for the United Kingdom. Much smaller quantities were supplied by Iran, Malaya, and the United States of America.

Burmese civilian consumption. Urban Burmans, accustomed to the daily use of numerous imported comforts and luxuries, were hardest hit, but lack even of needles, thread, and clothing affected all parts of the population.

THE REHABILITATION PERIOD

In view of Burma's extremely great war damage, and of the lack of available exports for the first two years or so after the end of the war, the organization and financing of the country's imports during this crucial period have proved very difficult. There is the keenest *desire* for every kind of import previously known to Burmans, and for a few wartime products as well,

and there is also a *demand* for these commodities in that high rupee prices can be had for them. However, Burma's currency and credit could hardly stand the shock of unrestricted imports of all types of commodities, for in the absence of foreign exchange with which to pay for such imports the exchange value of the rupee would decline to unknown depths. In anticipation of these problems the Government of Burma in exile at Simla worked out plans during the war for a Civil Supplies Organization charged with the responsibility for importing and distributing essential commodities to Burma's civil population. Large British importing firms were employed by the Board to act as agents for clearing, storing, and distributing imported commodities to retailers throughout the country. This organization has been a favorite target of nationalist editors and speakers, who accuse the Government of using it (along with various other projects) as a cloak for the perpetuation of the monopolies of British firms on certain sectors of the nation's economies. Numerous official statements have hotly disputed these charges.²

An authoritative summary, from the standpoint of a high-ranking Government of Burma official, was contained in an address by Mr. T. L. Hughes to the Royal Central Asian Society, in London, during September 1946. Part of Mr. Hughes's speech was as follows:

In anticipation of the liberation of Burma, what is known as the Young Working Party produced estimates of the civil population requirements on a "disease and unrest" basis. The estimates were framed to cover two years from the date of liberation and were phased into six-monthly periods . . . Up to 31st March 1946 out of 88 million yards of sorely-needed textiles, only 21 million yards had actually arrived. As regards cooking oil—another commodity of which the country is crucially short—against a requirement of 12,000 tons, arrivals under the military program have not exceeded one tenth of that amount. The first shipment of supplies under the civil program arrived ex-United Kingdom on 19th January 1946 and since then the flow has shown a satisfactory improvement. The first shipment of supplies for Govern-

² For one such rebuttal, see *The Burman*, May 8, 1946.

ment departments, etc., arrived ex-United Kingdom on 6th January 1946 and subsequent monthly arrivals have shown a satisfactory upward curve.³

The aim of Government from the outset has been to revive the private trade in imports with all possible speed The policy as announced at the beginning of the year freed from all restrictions imports (other than reserved foodstuffs) from British Empire countries within the sterling area and enabled the flow of private imports to begin.

The major obstacle, however, which prevents a more rapid revival of the import trade is the short supply position in Burma's nearest neighborhood, India, on which Burma depended in the prewar period for a large proportion of its imports. The over-all shipping shortage too has played its share in limiting the flow of supplies into Burma.

The clearance and storage of civil supplies is the responsibility of the Civil Supplies Board the major problem facing these organizations was the widespread pilferage of cargoes in transit, mainly on the wharves, but also between the wharves and godowns the Port Commissioners, Police, and Customs, acting in concert with the clearing agencies, have, however, gone a long way toward bringing the situation under control.

The responsibility for distribution, over almost the whole range of civil supplies lies with the Civil Supplies Board.

It is the declared policy of the Government of Burma actively to promote the full participation of Burman firms in the commerce and industry of Burma. Informal contacts with major European firms have resulted in proposals for assisting young Burmans to enter the higher ranks of such undertakings. Facilities have been given to several Burmans to proceed to India to establish trade connections. Particulars of export quota holders in the United Kingdom and India have been furnished to Burmese importers to assist them to make the necessary contacts. Arrangements were made for the scheduled banks to return to Burma at an early stage and they actually opened in Rangoon on 23rd January, 1946.⁴

³ For a general discussion of the problems faced by those responsible for supply see "Aspects of Rehabilitation in Post-War Burma," by A. H. Seymour, in the *Journal of the Royal Society of Arts*, January 17, 1947.

⁴ *India and Burma News Summary*, September 26, 1946, distributed by the Indian Agency General, Washington, D.C. With regard to Mr. Hughes's last statement, it should be noted that the only American bank, the National City Bank of New York, did not reopen its Rangoon branch when the British banks did. Absence of permission to import from non-sterling-area countries would effectively discourage a non-British bank.

Notification No. 13 of March 16, 1946, prohibits the import into Burma of most types of goods from non-sterling areas without special import licenses. The application for such a license calls in Item 15 for "description of efforts, if any, which have been made to obtain the goods or substitutes thereof from sterling countries." In other words, the burden of proof was placed on the importer, to show (a) that the goods are essential, and (b) that they are not obtainable in the sterling area. If satisfied on both points, the Supplies Department issues a license and the non-sterling exchange is released. To the middle of 1947 this system had not resulted in significant imports from the United States.

Official Port of Rangoon statistics showed imports to total 71,706 long tons in April 1946 and 69,537 tons in May. The largest single item in each month was classified as "Civil Affairs," or imports of the Civil Supplies Board, and amounted to 23,710 tons in May. Imports in that month included 14 MacArthur locomotives and tenders, 6 Garratt locomotives and 12 tenders, and 62 box cars and brake vans. Although exports were normally much greater in volume than imports, the May 1946 exports weighed only 20,255 tons, of which 11,253 tons was rice from crops previous to the one just harvested.

The official report for July (Customs Department) noted that "the bulk of imports came from India and consisted mainly of leather manufactures, glassware, hardware, medicines, toilet requisites, cigarettes, and tobacco. During this month also, substantial quantities of goods arrived from the United Kingdom, a fair proportion of these being cement. The other items are motor vehicles, machinery, and textiles."⁵

By February 1947, the *Survey of Departmental Activities* could report: "The Customs revenues collected during the month amounted to Rs. 3,505,432. A large quantity of cotton piece goods was imported from India and the United Kingdom. Other important items of import . . . consisted of drugs and medicines, gunny bags, chemicals, machinery and hardware. There is a general feeling in business circles that there are far

⁵ *The Burman*, August 23, 1946.

too many restrictions on trade both in importing and exporting countries. It is hoped that the . . . International Trade Conference in Geneva will bring about the stabilization of trade and relaxation of trade restrictions."

THE POST-REHABILITATION OUTLOOK

At the present rate, it will probably take at least until 1950 to restore Burma's export economy to its prewar level, and this estimate may prove much too optimistic in case there is continued civil unrest. During that period, unless substantial loans from the International Bank or other non-British sources become available, it seems likely that Burma's rehabilitation will be linked to Great Britain's own rehabilitation, and to the ability of the latter country to supply the necessary machinery, rolling stock, and capital to do the job.

Looking beyond the period of rehabilitation, present political trends indicate that Burma will be self-governing, and will choose to avoid such extremely close ties with British Empire countries as characterized the prewar economic situation. Imports will probably come principally from India, the United Kingdom, Ceylon, and Malaya, for geographic and historic reasons, but it will be surprising if those countries have the near-monopoly of Burmese imports which they formerly enjoyed.

There is a distinct possibility that nationalism may lead to strenuous efforts to manufacture locally some textiles, bicycle tires, canned goods, and numerous other commodities formerly imported. Burma does not have the raw materials for a complete manufacturing program, however, and even if it did, experience in other developing countries has rather consistently shown that as fast as one import ceases because of the development of domestic industry, other imports start or are expanded. The more developed and industrialized countries have the most imports per capita. Hence it may be expected that Burma's market will absorb an increasing quantity and variety of imports in the post-rehabilitation period, provided world political and economic conditions are at all favorable to international trade.

XIII

GENERAL SURVEY OF BURMA'S INTERNATIONAL ECONOMIC RELATIONS

BALANCE OF TRADE

BURMA had a higher per capita foreign trade than any of its neighbors except, of course, the entrepôt country of British Malaya. This is largely a result of the specialization of Burma's agriculture in one large export crop, together with the rich mineral and forest resources for which there was relatively little use locally. The following tabulation, based on foreign trade and population figures from the *Foreign Commerce Year Book*, shows also that Burma was the only country in which per capita exports were more than twice as great as the per capita imports:

PER CAPITA FOREIGN TRADE IN SOUTHEAST ASIA, INDIA, AND CHINA (Annual Average, 1936-1939)

Country	Imports	Exports
British Malaya	U.S. \$63.00	U.S. \$75.55
Burma*	5.60	12.65
Netherlands Indies	4.00	6.70
Siam†	3.55	5.10
Indo-China	2.60	4.05
India	1.60	2.00
China .....	.70	.40

* Burma average for the fiscal years 1936-37 to 1939-40.

† Siam average for fiscal years 1935-36 to 1938-39, inclusive.

No reliable estimate of the balance of payments for Burma is available, but from the foregoing table it is evident that the net "invisible imports" for the years 1936-39 amount to somewhat more than \$7.05 against ordinary merchandise imports of \$5.60. The reason total invisible imports must have been

greater than \$7.05 is that there were some "invisible exports," (i.e., transactions which caused foreign currencies to be paid in exchange for rupees), such as tourist expenditures in Burma and missionary contributions from abroad.

The 1939-40 figures were \$80,730,000 for imports against \$175,219,000 for total exports. The latter figure included exports of silver and was taken from the official *Seaborne Trade of Burma*.

The phenomenal "favorable" balance of merchandise trade of Burma was accounted for by the fact that most of the million Indian immigrants were single males who sent surplus funds to the extent of approximately Rs. 30,000,000 annually to their families in India by money order alone. Indians also sent money to India in other ways and when they returned to India took surplus savings with them. Europeans and Americans, although few in number, sent considerable portions of their ordinarily large salaries out of Burma. The Chinese immigrants were often domiciled in Burma with family connections elsewhere, and many of them also made substantial remittances abroad. Pensions to civil servants (the retiring age was 55) amounted to a considerable sum and much of that sum was transferred abroad, as European civil servants ordinarily retired in the United Kingdom. Moreover, banking, insurance, and shipping were almost completely in the hands of nonresidents.

Table 27 shows the balance of Burma's foreign trade in private merchandise from 1909 to 1941.

An interesting feature about the foregoing table is the relative stability of both imports and exports, although, of course, there was a decline during the depression as in other countries. Likewise it will be noted that imports were more than half as great as exports (i.e., "invisible imports" were less than "visible imports") up to 1931-32, but that a considerable change took place in that year and continued through 1939-40. Perhaps this was a reflection of the fact that a considerable part of Burma's out payments were due to interest charges and other items which were not reduced proportionately with the

general fall of prices and economic activity during the world depression. They might also have been a reflection of the fact that new investments by foreign companies and by Indian moneylenders came virtually to a halt at the beginning of the depression and hence an important source of foreign exchange ceased to be made available to Burma.

TABLE 27
BURMA'S FOREIGN TRADE IN PRIVATE MERCHANDISE, 1909-1941
(In millions of rupees)

Yearly Average or Year*	Imports	Exports†	Balance of Trade
1909-10—1913-14.....	249.9	361.9	112.0
1914-15—1918-19... ..	229.5	378.8	149.3
1919-20.....	321.0	558.7	237.7
1920-21.....	469.5	542.7	73.2
1921-22.....	379.3	643.2	263.9
1922-23.....	380.1	653.7	273.6
1923-24.....	347.7	615.2	267.5
1924-25.....	374.0	675.8	301.8
1925-26.....	399.4	791.6	392.2
1926-27.....	404.9	670.6	265.7
1927-28.....	443.9	750.1	306.2
1928-29.....	371.7	679.3	307.6
1929-30.....	370.9	702.0	331.1
1930-31.....	283.8	548.8	265.0
1931-32.....	212.5	447.6	235.1
1932-33.....	202.9	463.0	260.1
1933-34.....	178.8	469.3	290.5
1934-35.....	204.4	507.3	302.9
1935-36.....	208.3	541.4	333.1
1936-37.....	247.8	561.0	313.2
1937-38‡.....	238.1	504.4	266.3
1938-39.....	207.8	485.0	277.2
1939-40.....	251.6	550.5	298.9
1940-41.....	295.5	553.7	258.2

* Fiscal years ending March 31.

† Includes re-exports.

‡ The figures for 1937-38 and thereafter exclude excise duty on mineral oil from the recorded value of exports. The figures for the earlier years are inclusive of excise duty.

FOREIGN INVESTMENTS

Indians, Chinese, and Europeans owned all the large factories and a large proportion of the workshops. Moreover, Indian Chettyars had invested an estimated Rs. 750,000,000 by 1930, according to an official report.¹ Much the greater part of Burma's public debt was foreign-held. A rough estimate of

¹ Burma Provincial Banking Enquiry Committee *Report*, 1930, Vol. I.

total foreign investments in Burma in 1941 may be given as follows:²

Foreign corporations	£47,200,000
Chinese	2,800,000
Indian Chettyars	56,000,000
Government and municipal obligations	45,000,000
Urban real estate	3,250,000
Indian industrial establishments not included above	1,000,000
	<hr/> £155,250,000

The foregoing figure for investments by foreign corporations is taken from *Foreign Capital in Southeast Asia* by Dr. Helmut G. Callis.³ Dr. Callis based this figure upon an extensive study of corporation reports, etc. The figure for Chinese investments is subject to a very wide margin of error but the Chinese are known to have owned a sizable area at the edge of the Rangoon business district as well as a match factory, saw-mills, rice mills, most of the pawnshops, a large proportion of the hotels, tea shops, liquor shops, and retail stores in all towns and many villages. Should all such Chinese investments be included, the figure would almost certainly be larger than the £2,800,000 just cited. However, Chinese often married Burmese women and to all intents and purposes became Burmanized so that in many instances the term "Chinese" was no longer applicable, and in particular, proceeds were not sent to China. The figure for Chettyar investments given in the foregoing is the sterling equivalent of Rs. 750,000,000—the only official estimate ever made.

Chettyars are known to have suffered very heavy losses during the depression and much of the 2,500,000 acres of land which they had taken over by 1936 were probably accepted in lieu of debts considerably greater than the market value of the land. Mr. A. M. M. Vellayan Chettyar stated in 1945 that he didn't believe there were Chettyar mortgages against more than

² J. Russell Andrus, "Foreign Investments in Burma," *Pacific Affairs*, March 1944, p. 93.

³ Published by the Institute of Pacific Relations, 1942, with a foreword by Dr. Carl Remer.

another 500,000 acres (in addition to the 2,500,000 acres owned by Chettyars in 1941). Two-thirds of the total Chettyar investment was believed to be in land mortgages or other investments in agriculture. Chettyar land was normally the best land, since Chettyars did not lend against poor security. It therefore must be assumed that by 1941 the average value of the 3,000,000 acres of land owned by or mortgaged to the Chettyars was Rs.150 per acre. In this case the total Chettyar investment in agriculture would amount to Rs. 450,000,000—a 10 percent decline from the 1930 figure of Rs. 500,000,000. There is no similar means of estimating the extent of Chettyar urban investments. It seems a fairly reasonable assumption, however, that Chettyar investments continued approximately intact in the eleven years following 1930 in view of the growth of the population and the economic activity of the country. For this reason the 1930 figure is believed to have been approximately accurate in 1941—Chettyar losses having been made up by accrual of interest.

The Government of Burma undertook an obligation for the India-Burma debt of Rs. 584,500,000 when the two countries were separated in 1937. Nearly 60 percent of this sum, or Rs. 344,482,000, was the capital value of the Burma Railways. Debts were reduced but slightly between 1937 and 1940.⁴ The Rangoon Port Trust, Rangoon Development Trust, and Rangoon Corporation, as well as a few public or semipublic bodies, also had outstanding bond issues. As for the urban real estate, nearly half of Rangoon's 1941 population was Indian and the Indians claim to have paid over half the real-estate taxes. The Rangoon Corporation assessed privately owned property in Rangoon at Rs. 25,846,164—the annual tax being Rs. 2,032,454. The latter seems a rather high proportion of the former and it may be, therefore, that the commercial value of the property was double its assessed value, or about Rs. 50,000,000, which puts Indian holdings at upwards of Rs. 25,000,000. Some of this undoubtedly belonged to th

⁴ The debt on July 31, 1941, amounted to Rs. 565,442,000, according to the official *Burma Gazette*. Of this sum Rs. 486,916,000 was owed to the Government of India.

Chettyars and is included in the Chettyar estimate noted in the foregoing, but there is no evidence of large-scale Chettyar holdings of urban land similar to Chettyar holdings of agricultural land.

Mr. A. M. M. Vellayan Chettyar, as quoted by the *Madras Liberator*, January 17, 1945, gave the following statistics on four of Burma's leading European companies :

The Burmah Oil Co., Ltd.: Capital £13,157,675; Dividends: 1930 22½, 1931 17½, 1932 20, 1934 15, 1935 20; Reserve: General £900,000; Insurance £620,000; Field expenditure equalisation £1,000,000; Fire and Marine Insurance A/c., £1,448,980; Bonus of 2½% capitalised of Bonus 33½.

Steel Bros. & Co., Ltd.: Capital £2,800,000; Dividend: 1923 40%, 1924 40%, 1926 20%, 1927 17½%, 1928 15%, 1929 50%, 1930 35%, 1931 10%, 1932 7½%, 1934 16%, 1935 8%; Reserve: General £350,000. Capitalised bonus 212½%.

R.E.T. & S. Co., Ltd.: Capital £800,000; Dividends: 1930 26 to 30 Rs. 1½, 1931 Rs. 1½, 1932 Rs. 1¼, 1935 Rs. 1½; Reserve: General £205,000, Insurance Renewal A/c., £492,624, For premium and contingencies, £155,913; Fire and Marine Insurance A/c.: Equalisation Fund £30,000.

Anglo-Burma Tin Co., Ltd.: Capital £662,000; Dividends: 1932 5%, 1933 10%, 1934 30%, 1935 35%, 1936 25%.

TARIFFS

Burma was part of the Indian tariff system even after 1937. An Indo-Burma Commercial Agreement signed in 1941 didn't have time to go into effect before the Japanese invasion. Hence Burma has had free trade with India from the time Burma was added to the British Empire until 1941. Import duties on commodities from Empire countries according to the Indian and Burmese schedules were rather moderate, ordinarily around 10 to 30 percent, while duties on non-Empire goods were approximately 50 percent higher.

Import duties during the Japanese period are believed to have been 25 percent ad valorem on all articles coming by sea. There was smuggling, however, in small craft from Malaya and Indo-China; rubber, oil, cloth, and small miscellaneous items being included in this illegal trade. Customs officials were

TABLE 28

BURMA'S TRADE WITH INDIA

Commodity	Unit	Quantity				Value in Thousands of Dollars			
		1937-38	1938-39	1939-40	1940-41	1937-38	1938-39	1939-40	1940-41
Total exports									
Rice	Long tons	1,326,239	1,571,000	1,909,785	1,275,455	79,300	84,469	95,204	72,502
Potatoes	Long tons	33,017	29,540	26,838	19,230	29,702	33,261	45,832	36,063
Beans	Long tons	10,861	16,616	14,152	9,892	858	829	841	565
Gram	Long tons	6,058	9,735	17,949	13,143	266	351	318	260
Other pulses	Long tons	27,014	42,994	56,728	.....*	131	220	472	338
Tobacco (unmanufactured) ..	1,000 lbs.	3,057	2,048	1,477	1,665	749	1,143	1,607*
Cotton (raw)	Long tons	1,119	591	424	779	76	56	60	48
Rubber (crude)	1,000 lbs.	5,956	4,947	7,496	5,647	159	8	53	113
Teakwood	Cubic tons	163,637	159,868	170,377	164,812	488	275	518	661
Kerosene	1,000 imperial gals.	131,338	126,329	140,479	124,991	6,173	6,065	6,104	5,859
Lubricating oil	1,000 imperial gals.	6,957	5,165	7,892	18,260	21,584	20,729	23,655	20,476
Other oils	1,000 imperial gals.	68,258	63,791	15,645	2,462	2,318	1,881	2,750	4,706
Candles	1,000 lbs.	3,179	3,624	2,996	2,292	10,303	8,735	2,762	430
Pig lead	Long tons	6,818	6,411	14,824	15,916	271	254	255	281
Tin, blocks, slabs	Long tons	183	276	290	2,849	753	1,481	1,477	1,891
Matches	1,000 gross	1,246	1,375	1,633	2,061	190	225	269	285
Other exports .....		.....	.....	.....	.....	350	357	428	526
Silver bullion	1,000 std. oz.	4,351	4,853	6,667	.....*	2,198	5,389	4,266*
Re-exports .....		.....	.....	.....	.....	1,449	1,588	1,975*
		.....	.....	.....	.....	1,242	1,622	2,162*

* Not available

portance to Burma as well as to India, Christian's statement seems unduly strong particularly when the subject under discussion is the Indo-Burmese Customs Agreement. Had India protected Burmese rice against the competition of Thai and Indo-Chinese rice so that India paid Burma more than the world price for rice, Christian's argument would be quite correct. However, both Burmese rice and several other commodities received no advantage in the Indian market and merely sold at the world price in that market.

Even on the assumption that the Indian government would, out of spite, purchase rice at the world price from Siam or French Indo-China instead of purchasing it from Burma, it is doubtful if there would be any important long-run effect of such action upon the world price of rice. In other words, such action by India would mean a redistribution of total world demand, but would not affect either the total world demand for rice or the total world supply of this commodity, and in the prewar period the world rice price was a competitive one. It is, therefore, not at all clear that "Burma would have the greatest difficulty in disposing of her surplus rice." Moreover, the Indian famine of 1943 has been officially attributed to a number of causes, one of which is the cessation of rice imports from Burma. Thus the wartime stoppage of that trade did not support Mr. Christian's thesis, nor did it prove that the Burmese rice grower was any more adversely affected than the starving millions of Bengal. As to mineral oils, it was noted in chapter vii that India normally imported about 52 percent of its mineral oil from Burma. Burma's teakwood was used extensively in the Indian railways and shipping yards.

On the import side, Bombay, Ahmedabad, and the other great textile centers furnished only 30 percent of Burma's total imports from India by 1939-40. The fact that Burma's cloth trade, in large towns as well as in village bazaars, was ordinarily in Indian hands, helped Indian goods--no doubt at the expense of Japanese textiles. The Jamshedpur steel mill, the largest in the British Empire, supplied a large part of Burma's needs for structural steel, etc., while the coal fields of Bengal and Orissa monopolized the Burma market. Since Burmese

taste and the general Burmese level of economic well-being were somewhat similar to those of India, it was but natural that India should supply Burma with a variety of manufactured goods. However, India could not compete with European suppliers of machinery and apparatus. Since nearly all commodities purchased by Burma from India were effectively protected by means of a tariff schedule of the two countries, it is obvious that Burmese purchasers of cloth, etc., were forced to buy many commodities at prices above the world level, thus making contributions amounting to millions of rupees annually to the industrial development of India. It is difficult to find any corresponding gain. Furthermore, the few industries in Burma which benefited by the protective tariff were almost invariably owned by non-Burmans.⁶

A rice-control scheme was introduced in the fall of 1941 in order that the Government might "control the export of next year's rice, by itself becoming the sole exporter."⁷ War-time economic measures are indicated in this decision and there was the hint of further probable Government control had the Japanese not invaded Burma when they did. The Indian rice exporters who had hitherto dominated the market protested without avail.⁸ Mr. Somerset Butler, leading European businessman, was appointed controller of both rice and cotton.

The Indo-Burma Trade Agreement of 1941 would have brought to an end a regime of free trade, for by its provisions low duties were to be imposed by both governments. The Burmese Minister of Commerce pointed out that Burma would receive Rs. 10,000,000 in customs duties and would still give some preference to Indian goods in the Burma market and vice versa. For instance, Indian cotton goods would receive a preference of 7½ percent and Japanese imports would be further restricted by quota. The slight preference previously

⁶ The chief, and not very important, exceptions were fish and unmanufactured tobacco, on which the Indian tariffs of 1940 and 1941 levied duties of 25 percent and Rs. 3-4-0 per pound, respectively, while imports of those commodities from Burma entered free or with nominal duty.

⁷ Official press communiqué, September 18, 1941.

⁸ *Rangoon Times*, October 7, 1941.

given Burmese petroleum products was withdrawn. This was perhaps the only substantial benefit hitherto received by Burma from the previous customs agreement. Rice was not to be taxed as it entered India from any country, but should the duty on broken rice be re-established, Burma's imports would receive a preference equal to the amount of the duty, or 10 percent, whichever was less.

In other words, the 1941 Indo-Burmese Trade Agreement was fair and reciprocal, and gave no incentive to a trade war. Neither Burma nor India levied duties which discriminated against the other, but neither (with minor exceptions) did they levy duties to protect one another's industries. India would continue to pay the competitive world price for most imports from Burma. Burma would either pay the competitive world price for goods imported from India or, if there were a tariff duty on a particular commodity, the tariff would be levied at about the same rate on Indian and on non-Indian goods. The benefit, therefore, of the higher prices paid by Burmese consumers would accrue to the Burmese exchequer.

BURMA'S GENERAL ECONOMIC DEVELOPMENT

Burmese nationalists before the war were beginning to clamor for a great program of industrialization. In this they did not differ from nationalists of most undeveloped countries who noticed that the world's most powerful and wealthy nations were those with the greatest industrial establishments. Hence industrialization appeared to be the key to wealth, happiness, and power. The following comments are quoted from a recent study by the present writer:⁹

Some writers who value industrialization highly blame European enterprises for a lop-sided economic development which lays all the stress on exports. It is undoubtedly true that European enterprises (like the very numerous and important Asiatic commercial and industrial firms) set up business in this area primarily to make a profit, and that they found the greatest opportunity for profit in

⁹ J. R. Andrus *Basic Problems of Relief, Rehabilitation and Reconstruction in Southeast Asia* (Oxford University Press, Bombay), 1945, pp. 63-64.

the development of export industries. In view, however, of the fact that they could equally well have developed local industries for the production of consumption goods had conditions justified, it is not necessary to impute to them any sinister motives, such as the desire to prevent optimum local economic development. The small size of the local market for most manufactured goods made it appropriate that Chinese, Indian and in some cases indigenous firms should spring up, operate on a small scale, and satisfy local needs. In some cases, moreover, European concerns did set up manufacturing industries with considerable success and profit, and catered to the local market.

Indochinese textiles are an outstanding example. That they did not set up more such enterprises probably shows that in their seasoned judgment more profit was to be made in developing the export industries for which this area was best endowed by nature. Some facts of geography and economics are no respectors of politics, and it is highly possible that a national government, itself owning a controlling interest in all local enterprises, would come to the same conclusion—the primary stress should be laid on the development of export industries.

This does not preclude the possibility of considerably greater industrial development than before the war. For instance, in countries like Burma, containers of jute, wood or metal have to be imported for the internal transport as well as the export of most local products other than teak. Perhaps most of such containers could profitably be manufactured locally.

There is evident a worldwide trend toward greater government participation in economic life and its control. There is every reason to suppose that a similar trend will go on in Southeast Asia, particularly if and as the colonies move toward self-government. They may eventually find that such economic control is more necessary to prevent the development of monopolies with headquarters in nearby parts of Asia than to prevent the development of similar monopolies with headquarters in Europe. Mixed companies, with control in the hands of the local government but minority holdings and technical management in the hands of foreigners, may serve a useful purpose.

THE PRESENT OUTLOOK

Since Burma's economy suffered a very great degree of wartime devastation, it will be some years before trade is fully restored to its prewar level and before the country can be ex-

pected to undertake ambitious new schemes for development. The views which follow are those of U Tin Tut, brilliant Burmese economist and former government servant, now Finance Member in the Burmese cabinet:

Never before in Burma's history has she needed . . . capital more and it is important that the Burmese should have the issues clear in their minds. The free flow of external capital into a country is ordinarily of advantage to the country, particularly where, as in Burma, there are undeveloped natural resources and there is no sufficient capital within the country. What was wrong in the past was that such capital was not controlled and directed by the Government of Burma in the interests of the Burmese. Care was not taken that the revenue of Burma obtained its full equitable share of the profits of external capital and in granting concessions and privileges to non-Burmese undertakings, no stipulation was made requiring them to reserve a portion of their share capital for Burmese investors, for the training of Burmans in the industry concerned, for the employment of Burmans in the higher staff of the organization and for Burmese seats on the directorate. These are measures which future governments of Burma cannot overlook, but care must be taken that the conditions demanded are not so harassing as to deter the entry of fresh capital.

In regard to the possibility of expropriation, we do not think that non-Burmese capital need worry. Not even the most extreme Burmese politician has ever seriously advocated the expropriation without compensation, of foreign business interests, and we somehow do not think that communism of the red brand will find the soil of Burma fertile to its growth. The expropriation of foreign oil interests in Persia and in Mexico did no good to these countries and the lesson has not been lost on other countries. It is probable that a self-governing Burma would introduce a considerable measure of state socialism and nationalize public utility services and perhaps some of the key industries falling outside the strict definition of that term. There is, however, no danger of expropriation without compensation. Burma intends to become a member of the United Nations Organization and any attempt by a free Burma to expropriate properties belonging to foreign nationals will necessarily come within the jurisdiction of United Nations Organization even if Burma is not to be a member.

No amount of state socialism will, however, give the Burman the training and experience he lacks in commerce and industry and a wise Burmese government will therefore need to go slowly and to

utilize to the full non-Burmese skill and experience during a transition period which must necessarily be long, as business experience cannot be acquired in a day. The non-Burmans have not only the experience but also the foreign contacts, and the capital. The right line of advance seems to us to be a partnership between these and the Burmese. Certain important British firms are already looking to the future and are recruiting Burmans for the covenanted ranks of their services. This will provide opportunities to young Burmans for training in commerce. We would like to see in addition the incorporation of new companies with part of their capital provided by the existing non-Burmese business undertakings of high standing and repute and the remainder by the Burmese themselves. Such a new company would in a sense be a subsidiary company of the old and could work in coordination with it. For instance, the new company could take over the distribution side of the business of the parent company and in any case the new company will harness the local knowledge and the goodwill of the Burmese to the experience of the non-Burmese element. There may be other ways of achieving the same result but the point is that the Burmese must be content to hasten slowly. A free Burma will need external capital, cannot afford to do without the non-Burmese business talent and experience which has helped to develop Burma in the past and, above all, she will need international goodwill, which alone is the key to the maintenance of freedom and the achievement of prosperity, and the neglect of which in the past led to the loss of Burmese independence.¹⁰

¹⁰ *The Burmese Review*, July 1, 1946. U Tin Tut, an Economics Honours graduate of Cambridge, edited this journal before entering the Cabinet of General Sir Hubert Rance as an independent or nonparty man. In view of the ability of Burmese Communists to organize strikes and other fairly impressive demonstrations of strength, one cannot be certain that U Tin Tut is going to prove correct in stating that "communism of the red brand will [not] find the soil of Burma fertile to its growth."

XIV

DOMESTIC COMMERCE

THE PRE-BRITISH ERA

MARCO POLO first noted that trade in Upper Burma and the Shan States was carried on by means of "five-day bazaars."¹ A part of the village is set aside as the bazaar area, within which traders usually squat with their little stocks of merchandise around them. A bazaar in any given village is open on every fifth day, and bazaar day rotates among a group of near-by villages, which means that at least one bazaar is open on any day in any particular neighborhood.

As indicated in chapter ii, the economy of pre-British Burma was quasi-feudal, groups of villages being largely self-sufficient. The five-day bazaars probably contributed to this result, binding together as they did the economies of the villages concerned. However, there were overlappings between the circuits of traders going from one five-day bazaar to another, so that commodities passed from hand to hand over a fairly large area. Furnivall states that there was:

. . . no distinct trading class, little wholesale trade and even the retail trade was very simple. Money was little used and most transactions were conducted by the exchange of goods . . . Most of the trade was carried on at the Fairs held in connection with annual Pagoda Festivals, when cultivators would bring in their produce and exchange it for their year's supply of *ngapi* and salt and such other goods as their land did not yield. Money, so far as it was used, consisted of *tickals*, lumps of uncoined metal containing a mixture of silver with alloy in various proportions which only an expert could assess. In a few large trading centers with markets there were brokers (*pwe*), grainmeasurers (*te*), and

¹ John L. Christian, *Modern Burma*, p. 127.

weighmen (*yazu-kaing*, scaleholders) whose function it was to witness commercial transactions and to assess and check the measurements of the produce and the value of the money paid for it. In some and perhaps in all recognized markets, the brokers and their intermediaries in trade obtained their position by inheritance and had partly an official character.²

THE BRITISH PERIOD

The British period in Burmese history meant the introduction of railway and riverine transport as well as of Indians and Europeans with comforts and luxuries hitherto unknown in Burma. It also meant the opening of a market for Burma's rice and teak, and hence the provision of means to buy consumption goods from abroad.

The specialization of Lower Burma on a single crop necessitated the import of clothing, vegetable oils, and other necessities, and led to the very great increase of domestic as well as foreign trade. A distinct trading class grew up—composed chiefly of Chinese and Indian immigrants, but also of some Burmans—principally Burmese women.

Burmans have ordinarily held their own in trade involving locally grown foodstuffs and handicrafts, although immigrants also have had a substantial share in such trade. Indians³ and Chinese, however, have nearly monopolized trade in imported commodities. Nationalist feeling has doubtless contributed to this end, for both the Indian and the Burmese trader is buying from his own kind, although each sells to the general public. The riots and rebellion of the 1930's, coupled with separation from India, undoubtedly stimulated nationalist feeling, and in addition probably contributed to the growing share taken by Burmese traders in the commerce of Rangoon, Pegu, and other centers.

² J. S. Furnivall, *Political Economy of Burma*, pp. 180-81.

³ The chief Indian groups which participated in Burmese retail trade were: (a) the "Chulias" or Tamil Moslems, who specialized in provisions; (b) the "Kakas" or Malabar Moslems, whose speciality was the tea-shop trade in the towns, and variety and notions in the districts; (c) the "Soortees" and "Memons" from Bombay, also Moslems, who specialized in piece goods, rice, and wholesale trade generally; (d) the Gujaratis (Hindus) from Bombay, whose speciality was general wholesale trade, piece goods, and luxury products.

Hundreds of Burmese towns have municipal bazaars, with concrete platforms and often with corrugated iron roofs, each trader ordinarily being allotted a space about ten feet square. Stalls are usually disposed of by auction either at a monthly rental, or by the payment of a premium to hold the stall at a small fixed fee. In the markets of larger cities, like Rangoon, Indian stall owners commonly paid fancy good-will prices, termed "salami" for the use of stall sites. This enabled them to occupy the site indefinitely at the fixed rent. Towns also had, in the prewar period, branches of Rowe and Company, a large European department store, and considerable prestige value was attached to goods purchased from Rowe's at prices above the bazaar level.

VILLAGE SHOPS

Every remote jungle village of any size has its shop. Sometimes the proprietor is a Burman, but often he is Chinese with a Burmese wife. In recent years, quite naturally, "Tayok Kabyas" or Sino-Burmans have come to play an important part in such trade. Indian Moslems from the Malabar Coast, called "kakas," were found in villages throughout the country. H. C. Baker⁴ describes a system of village credit which has grown up around these shops. Foodstuffs and common household necessities are sold, ordinarily on credit. Debts are paid, usually in rice, at harvest time. Baker reported that few cultivators in Insein District were free from *zekytee* or bazaar debts. Laborers were usually in debt also, although they required the guarantee of their employers before they could borrow. Under this system six baskets of paddy must be paid at harvest time for one basket of rice purchased at the shop. More common is the practice of converting *zekytee* into *sabape* loans. Under the latter system, a debt of, say, Rs. 30 is repaid at harvest by 100 baskets of paddy. Perhaps the loan was current for only four to six months, and the paddy may have been worth Rs. 80 at harvest time. Thus the actual rate of interest was several

⁴ *Settlement Report for Insein District, 1924-25*, published by the Government Press, Rangoon, by order of the Commissioner for Settlements and Land Records.

of the measured basket of paddy. For transactions made on the basis of volume the basket has been standardized by the Government of Burma as equivalent to nine gallons. Such transactions often offer opportunity for trickery, because a basket can be made to hold more or less by adjusting the flow of paddy in measuring. For transactions made on the basis of weight the basket is generally accepted by the trade as a unit of 46 pounds.

Rice is purchased on the threshing floor by agents of Indian, Burmese, Chinese, or European rice millers. Indian, Burmese, and Chinese millers sometimes send out agents as early as June, to purchase rice in advance for delivery in December or January, by means of the *sabape* system described above. Mogul Street, Rangoon, was the prewar center for the rice trade. Steel Brothers and other large European firms did not engage extensively in this practice, although they often purchased great quantities of rice on formal contracts from smaller Indian firms with operating agencies in the districts.

In the Irrawaddy Delta most threshing floors are situated on the banks of streams. If the stream is large enough, the paddy is loaded directly onto a cargo boat. Otherwise it is taken to a convenient collecting depot by sampan.

Burma has no elevators for the year-around storage of rice, and most of the rice is milled and exported in the first half of the calendar year, although the seasonal variation was not as great in the years just before the Pacific war as in earlier years.

The marketing of groundnut is similar to the marketing of paddy. It is sold by the basket, and complete standardization of baskets has not yet been achieved. Chinese and Burmans have ordinarily carried on the trade in groundnuts, although exporting was usually done by the large European firms, particularly Steel Brothers & Co. The Chinese groundnut dealers were often shopkeepers as well. The crop was often purchased months in advance, as in the case of paddy.

Rather similar arrangements prevailed for the marketing of cotton and other crops, except that the gins and mills were ordinarily in the Dry Zone.

Price-control efforts of this period in Burma were described as a fortress which looks imposing but is made of cardboard, with a few shock troops to make an occasional sally on a limited front to keep up the illusion that the fortress is not a mere façade. Unfortunately, the actual shortage of some medicines and other imported commodities, plus an increase in purchasing power on the part of some elements of the population, and in particular the draining off of goods to China—"the bottomless pit"—resulted in shortages, black markets, and the other familiar evidences of breakdown of state control. Laws were passed, and serious efforts were made to enforce price control, both by prosecutions and by publicity, and it may be that the ascent of prices was made a little less steep as a result. After December 23, 1941—date of the first bombing raid—no organized effort was made to control prices. The only feasible effort in those dark days was to get goods onto the market at any price.

THE JAPANESE PERIOD

Retail trade, like everything else, was profoundly affected by the Japanese invasion. Abrupt cessation of most imports was probably the first important factor. Transportation difficulties led to local shortages even of domestic commodities, and rationing was resorted to in Rangoon and some other centers. Quite often the co-operative movement was encouraged, co-operatives being permitted to handle rationing for their members with some advantages over private stores.

Removal of many Chinese and Indian traders was probably an additional factor in creating dislocations in certain centers, for these traders usually carried on brokerage and wholesaling operations. Burmans were much better able to take care of local bazaar business, through past training, than to engage in the more complicated transactions which involve shipment of goods from place to place, thus equalizing prices throughout the country. For a time only Burmans were permitted to use "Victory Market," the former municipal or Scott Market, but by 1944 most of the trade was in outlying areas, for civilians largely evacuated the central part of Rangoon.

Burmese nationalism was active and the Burmese Chamber of Commerce and Industry as well as the Burmese Merchants' Association passed numerous resolutions, but both were naturally helpless to ameliorate the deteriorating economic situation. Black markets prevailed while price control and rationing broke down to a very large extent.

Local trade in cotton and groundnuts was largely in the hands of the Japan Cotton Trading Company and other Japanese firms. Village headmen were made purchasing agents, and were required to purchase half the crop (or some other fixed proportion) under severe penalties. Naturally, the price paid for this compulsory purchase was much below the black-market level, and it is believed that many farmers concealed part of their crops. The Japanese also attempted to compel farmers in certain areas to sell half their rice at controlled rates, but appear to have been unsuccessful in this attempt.

THE REHABILITATION PERIOD

The first two years of the rehabilitation period saw steady but uncomfortably slow progress in remedying the economic distress, bordering on chaos, which characterized the internal trade of Burma in the Japanese period. The individual shop continued to be the center of retail trade, but while an increasing stream of textiles and other commodities was imported by the Civil Supplies Board,⁶ it was never sufficient to cope with the demand. The high prices of commodities was a prime subject of political speeches, along with the shortage of supply.⁷ Pilferage of imported goods left under guard on the docks was a cause of common and bitter complaint, and thefts of all kinds were unbelievably prevalent, with the day bazaar competing with the night bazaar in selling stolen goods at inflated prices.

The Government published extensive lists of foodstuffs, textiles, hardware, and miscellaneous items for which maxi-

⁶ See chapter xii, pp. 177-80.

⁷ Cf. President Aung San's address to the Supreme Council of the Anti-Fascist Peoples' Freedom League, reported in the May 19, 1946, issue of *The Burman*.

num retail prices were fixed.⁸ There is no evidence that the bulk of commodities changed hands at these prices, however, and U Aung San and others complained bitterly of the disparity between official prices—the prices upon which cost-of-living statistics were based—and the black-market prices which most of those desiring goods had to pay.

The official cost-of-living statistics revealed a fourfold increase since 1941. This rise is demonstrated in the "Consumer Price Index," published weekly in the *Burma Gazette*, which worked out "on an austerity basis," at 426 for Burmans in July 1946. In 1941 the figure had been 100. The figure for December 1945 had an index number of 2,450, against 391 the following July. The over-all index for Burmans declined slightly to 415 by the first week of September 1946;⁹ by the third week of September it had fallen to 386, and by March 1, 1947, to 315. As a result of the study of a Joint Advisory Committee on the High Cost of Living, increases were recommended in government salaries varying from 40 percent for salaries of Rs. 20 to Rs. 30 per month, to 100 percent for salaries of Rs. 250, and 200 percent for salaries under Rs. 20.¹⁰

Meanwhile the Civil Supplies Board acquired an unpopularity similar to that of the United States Office of Price Administration and was put into liquidation on May 31, 1947.

It was believed that hoarding contributed to the high cost of rice, staple food of nearly all classes of the population. Hence the official *New Times of Burma* published the following notice on September 18, 1946:

The Government has decided to order the compulsory declaration of all stocks of paddy and rice in excess of a minimum amount of 500 baskets of paddy or 250 baskets of rice in the possession of any one person or in any one place and to require all changes in

⁸ See the *Burma Gazette*, April 13, 1946, Part IV, pp. 182-85, for a list several hundred items long.

⁹ *New Times of Burma*, September 11, 1946.

¹⁰ *New Times of Burma*, September 11, 1946. The available report does not make it clear why the allowance for salaries under Rs. 20 per month is five times greater than allowances for salaries just over that figure. By May 1947 it seemed certain that the drive for economy in government expenditures would result in substantial reductions in these allowances.

declared stocks to be notified with information as to the source or destination of the grain added to or removed from the stock. The Government has also decided, if need arises, to requisition stocks of paddy or rice, surplus to the holder's personal needs, at prices fixed by the government.

There have been no subsequent reports to indicate that the Government has seriously attempted to enforce this decree.

THE BURMAN IN COMMERCE

It is often assumed that the Burman has no aptitude for business, and that the Burmese share in trade must be limited to that carried on by Burmese women in local bazaars. The growing share of Burmans in trade in local produce, and the considerable number of Burmese men who make a success of their own business, or work acceptably for European firms, suggests that this view is quite unsound. Indians and Chinese have a much older commercial tradition than have Burmans, and it was not surprising that they had the established connections abroad which enabled them to make an excellent start in Burma's domestic and foreign commerce. Burmans, meanwhile, were more concerned with the development of agriculture—and they furnished most of the labor force and most of the farm owners for Lower Burma's phenomenal development. That development having now been made, and this generation of Burmans having grown up in an environment which includes some connection with world trade, it may be assumed that they will continue to expand their foothold in the trade of their own country. The vicissitudes of the war, with the flight to India of great numbers of Indian traders, will further tend to assist Burmans to make a better competitive showing. Moreover, the first two years of peace saw many more Indians leaving Burma to return to India than returned to Burma from India. Burmese nationalism may be expected to play its share in stimulating indigenous trading.

XV

INLAND NAVIGATION

GENERAL SURVEY

BURMESE civilization has developed along the banks of the Irrawaddy for many centuries. Prior to the advent of railways and motor vehicles, that river and its effluents, as well as the Chindwin, Sittang, and Salween, provided the only important highways for commerce. Even today, the great majority of the people of Burma live within a few miles of a river or of a stream navigable by small "sampans." The Irrawaddy Delta, much the most important rice-exporting region in the world, is so cut up by streams that inland navigation is the only feasible means of transport and practically every family has its own boat, while the boat largely replaces the cart as a means of getting goods as well as people from village to village.

In modern times, rail and road competition have reduced, to some extent, the dependence on river transport and have provided faster means of communication, but even today there are no railways within 20 or 30 miles of the oil fields, and nearly all petroleum not sent through the pipe line travels to Lower Burma by river. Most of Burma's teakwood (third export—following rice and petroleum products) floats down the Irrawaddy, the Chindwin, the Sittang, or the Salween.

One large firm, the Irrawaddy Flotilla Company, Ltd. (Scotland), handled practically all public carrier traffic in the country. Freight carried amounted to about 1,300,000 long tons annually, against approximately 4,000,000 tons carried by the Burma Railways in the very busy year, 1940-41, when Burma Road traffic was at its height. However, it is probable

that total inland water traffic was as great as total rail traffic, even in that year. Standing on the banks of the Twante Canal, through which passes most of the traffic to and from Rangoon, one cannot but be struck by the picturesque parade of craft of all sorts which drift with the tide and are propelled by oar, pole, sail, or towrope. Sampans and barges, from less than a ton to 100 tons in capacity, outnumber Irrawaddy Flotilla launches many times over. They are owned, in many cases, by the companies which use them for transport of paddy and other crops. In other cases small entrepreneurs make occasional trips on a basis somewhat similar to that of "tramp" steamers on ocean lines. Again, farmers and others make trips by boat to the metropolis, with produce from their villages.

The Irrawaddy Delta and some other areas are covered with a multitude of small streams, some of which are dry at low tide but which can float a small sampan at medium or high tide. Harvest time finds hundreds of such streams in use, as sampans take out the rice crop. Streams within 60 or 70 miles of the ocean are tidal, with the result that barges are propelled very cheaply by the tide, which runs at a rate of five or six miles per hour in the Twante Canal. With wartime destruction of virtually all steamers and motorboats, simple sampans, barges, etc., have been called upon to play a very important role in restoring Burma's broken-down transport system.

CHIEF ROUTES

There were numerous routes over which the Irrawaddy Flotilla Company carried on regular scheduled services, but perhaps the most important of these led from Rangoon through the Twante Canal to the China Bakir River (eastern effluent of the Irrawaddy) and then followed that river past Prome, the oil fields, and Mandalay, to Bhamo, nearly 1,000 miles distant and near the China border. The standard river steamer with a draft of three and one-half feet could ascend to Bhamo at all times of year, and during the high-water season of June to October, larger vessels could use the river. The speed of the Irrawaddy above tidal influence is ordinarily about three

knots per hour. In flood season it is as high as seven and one-half knots.

Another long and important route branched from the Irrawaddy at Pakokku and followed the Chindwin to Homalin, nearly 400 miles away, near the Assam border. Above Homalin there was sparse population and little reason to extend the service. Above Bhamo was the treacherous First Defile of the Irrawaddy, which prevents navigation except during certain seasons, when the dangerous rocks are visible. Myitkyina, above Bhamo, therefore has to rely on rail and road transport for the most part.

The third most important route is the Rangoon-Myaungmya-Bassein route, which thus pursues an east and west course from one side of the Irrawaddy Delta to the other, with stops at important towns. Other routes in the Delta connect Rangoon with Pyapon, Maubin, Henzada, Wakema, Laboota, Dedaye, Yandon, and Moulmeingyun. Practically all traffic between Rangoon and the Delta towns passes through the Twante Canal, about 22 miles long. This canal was excavated to a depth of six feet below low-tide level. In 1939-40 it brought in canal tolls of Rs. 743,506.¹ It also carried most of the 2,341,968 long tons of registered tonnage which passed through it and the Pegu-Sittang Canal.² Value of the tonnage on the two canals was officially placed at Rs. 144,918,610. Passengers passing through the Twante Canal in 1939-40 were officially estimated as numbering 861,205.

The Pegu-Sittang Canal is the only other navigation canal in Burma, and connects the Pegu River (a branch of the Ilaing, or Rangoon, River) with the Sittang. It has very little passenger traffic, and practically no traffic in steam- or motor-boats. It has a minimum depth of six feet, and its two locks are 31 feet wide and 18 feet deep. About 95 percent of the traffic through this canal is toward Rangoon, against 60 percent,

¹ *Annual Administration Report of the Public Works Department, Irrigation Branch, 1939-40*, p. 4.

² The Rangoon-bound traffic on the Twante Canal in 1939-40 included 421,022 long tons of paddy and rice, 143,111 tons of petroleum products, and 841,820 tons of "miscellaneous."

by weight, of the Twante Canal's traffic. It is reported to have accommodated heavy traffic in timber in recent months.³

The Sittang River is of little consequence for inland navigation, because of a tidal bore, which makes its lower reaches impracticable for navigation. However, barges and sampans from its upper reaches, above Toungoo, reach Rangoon through the Pegu-Sittang Canal.

The Salween River, rising in Tibet, is longer than the Irrawaddy, but the Hatgyi Rapids, about 75 miles above the sea, or 55 miles above Moulmein, prevent the use of its middle reaches except by Burmese longboats or *londwins*, propelled by oar. The Irrawaddy Flotilla Company had a busy schedule of launch services in the area around Moulmein, although its activities there could not compare with those in the Irrawaddy Delta. The *londwins*, which navigate considerable stretches of the Salween as it flows through Karenni and the Shan States, can also reach Mehongsohn in Siam, west of Chiangmai.

CHIEF ENTREPRENEURS

The Irrawaddy Flotilla Company probably carried less than half the total freight of Burma's inland waterways. However, it was the only public carrier of any importance, and its name was synonymous in the minds of most people with inland navigation. Statistics relating to this company, in the immediate prewar period, were approximately as follows:

Powered craft	263
"Dumb" craft	383
Passengers	7,000,000
Freight (tons)	1,000,000
Steamer crews	5,500
Dockyard employees	3,000
Clerical staff	500

The "dumb" craft included nearly 200 cargo boats, the most typical of which were 50 to 100 feet in length, had a mean light draft of five or six feet, and carried 2,000 to 5,000 baskets of paddy (one basket equals 46 pounds). In addition, there were more than 100 "flats" of 175–250 feet in length, and

³ *Survey of Departmental Activities*, January 1947, p. 10.

capacity of 340 to 920 long tons each. These vessels were attached to the sides of large steam launches, both freight and passenger.

The powered craft included about fifteen huge paddle steamers, 232 to 326 feet in length, the latter said to have been the largest shallow-draught river steamers in the world. The most numerous type of powered craft was the twin-screw creek steamer, used in the Irrawaddy Delta. These steamers were 80 to 115 feet in length, with a draught of around four feet, and a carrying capacity of about 100 long tons. They were highly maneuverable, and their Chittagonian crews took them through the labyrinthine Delta in the dead of night at top speed (10 to 12 miles per hour) with only the single searchlight to guide them through the winding channels. Most vessels were combined freight and passenger craft with double decks. A few passengers rode in cabins at the front or rear, but most spread out blankets or mats on the flat deck or perched on top of the bags of paddy, cans of kerosene, or tubs of live fish.

Steel Brothers, Ellermans Arracan Rice Company, and other firms had their own "paddy gigs" for moving rice from their up-country collecting stations to Rangoon or the other ports. The typical paddy gig has a crew of six to eight, is propelled by sail, pole, and oar, as well as by the tide, and is usually about 35 feet in length, with a 10-foot beam, and a draught of five to seven feet. Its capacity is 60 to 100 tons of rice.

The five leading timber firms had their own vessels for rafting and towing timber. The oil companies likewise had their own barges for transporting petroleum products not carried by the pipe line. Finally, the Burma Government had a number of motorboats for the use of its officials on tour, and the Burma Railways had large ferries at Moulmein and Henzada for river crossings.

Other entrepreneurs, as indicated above, were thousands of individuals and small firms with one or a few vessels each who were quite unable to offer serious competition to the powerful Irrawaddy Flotilla Company.

The Irrawaddy Flotilla Company owned the country's leading dockyards which are described in chapter x, page 148.

THE JAPANESE PERIOD

The great majority of the Irrawaddy Flotilla and other powered craft were sunk or otherwise made unavailable to the Japanese prior to British withdrawal in 1942. Many of the hulks were found in a rusting condition when the country was reoccupied in 1945. The Senda Company, and later the Yamashita Kisen Kaisha, took over riverine transport with a few available river craft but by 1944 intensified Allied bombing brought river traffic to a very low ebb. However, transportation by small boat continued, and in the latter part of 1944 traffic in the Pegu-Sittang Canal was almost normal in spite of damage to a sluice.

The Japanese restored the Dalla Dockyards to operation, expanding them in some respects while undertaking the building of small ships in a number of other places, including Mergui at the far south. All such efforts, however, did not suffice to keep riverine traffic at more than a small fraction of its prewar level, and Allied bombing destroyed most dockyards before the end of the war.

By the fall of 1944 the Japanese had a Burma Marine Training School at Rangoon, with a six-months' course looking toward the posts of captain and chief engineer on river steamers. It would seem that such an institution might have a place in any scheme for rehabilitation and reconstruction.

THE REHABILITATION PERIOD

The official *Burma Gazette* of May 25, 1946, publishes the "Inland Water Transport Order," 1946, setting up a Board "to operate, regulate and control" inland water transport. It consisted of officials and nonofficials, the latter presumably being experienced Irrawaddy Flotilla officers for the most part. This Board had very wide powers.

The first two years of reconstruction saw the repair of some Irrawaddy Flotilla vessels, the return from India of others, and the import from the United Kingdom of a few more, but traffic

did not return to normal. In view of the fact that the rice available for export was only a fraction of normal, however, the relative paucity of river steamers was not as great a handicap to Burma's economy as might have been supposed. Dacoity was a great handicap, even for the large vessels, as attempts were made by bandits in sampans to "hold up" even the large river steamers. A military escort was provided in some cases to permit essential traffic to continue.

The following summary of progress between January 15, 1946, and early May of the same year was supplied in a press note by the General Manager, Irrawaddy Flotilla Co., Ltd., government agents for the Inland Water Transit Board:

The operation of I.W.T. was taken over from C.A.S. (B) on 15th January this year and from then until the end of April over 60,000 tons of cargo and over 30,000 passengers have been carried.

Maintenance lifts have been regularly carried out from Prome up to Myingyan and Mandalay, also from Mandalay to Katha and Bhamo and on the Chindwin. In addition, regular services from Rangoon to main Delta stations were operated until the middle of April when they had to be suspended due to the prevalence in the Delta areas of dacoity. On two occasions launches were fired on and in the second instance the clerk of the launch and one passenger were killed. Military guards have now been arranged and the Delta services have again started up. Vessels upcountry have also been attacked and on no less than seven occasions in one week craft were fired at above Mandalay. Military escorts now accompany convoys above Mandalay and this arrangement is working satisfactorily.

The total ton mileage figure for cargo carried during the period under review amounts to over 13,000,000. Arrangements are now in hand for the taking over of services in Moulmein waters.

Dockyards.—Dalla Dockyard workers went on strike early in March and unfortunately no settlement has been reached. A conciliation board has completed its investigations and the report should be published this week. Unfortunately this strike has caused a complete hold up in re-erection of craft which have arrived from the United Kingdom. Repairs and maintenance of craft at present operating are also being retarded. Rangoon Foundry on the other hand is a hive of industry and the slips are continuously in use and the machine shop is kept extremely busy.*

* *The Burman*, May 10, 1946.

In September 1946 it was reported that "craft ordered from the United Kingdom as part of a costly rehabilitation program are . . . now beginning to arrive."⁵

By January 1947, it was reported that 31 craft had been taken over from the army, but labor trouble had prevented most of them from being placed promptly in service. Considerable progress was reported in clearing inland navigation channels.⁶ In spite of handicaps, the Rangoon-Prome service was restored December 1, 1946, and the cargo service was extended to Mandalay, January 3, 1947.⁷ Six more shallow-draft vessels arrived in April.⁸

POSTWAR PROSPECTS

Since boats of various types carried nearly all Delta traffic and a large share of traffic along navigable streams, there seems little prospect of expansion in the postwar period, except as the Burma Road or the projected Burma-Yunnan Railway provides more traffic to be shared by the railway and riverine transport. From 1939 the Irrawaddy Flotilla Company secured a portion of the lucrative Burma Road traffic, carrying the more bulky commodities as far as Bhamo, whence they were dispatched to Kunming via Namkham and Muse. It remains to be seen whether the Burma Road will provide peacetime traffic to a similar extent. Should the Burma-Yunnan Railway become a reality, it is possible that some freight might transfer from rail to river launch (or vice versa) at Mandalay. Otherwise, it seems safest to predict a restoration of inland water transport to its rather satisfactory prewar position.

⁵ Address by T. L. Hughes before the Royal Central Asian Society, September 1946.

⁶ *Survey of Departmental Activities*, January 1947, p. 17.

⁷ *The Burman*, November 27, 1946.

⁸ *Survey of Departmental Activities*, April 1947, p. 13.

XVI

OCEAN SHIPPING

GENERAL

PRIOR to the opening of the Burma Road in 1939 all but a tiny fraction of Burma's commercial intercourse with other countries took place by sea. In spite of the fact that Burma has a very long shoreline, there are only seven ports worth mentioning, and one of these, Rangoon, exported two-thirds of the country's rice, and had a still larger share of the trade in most other commodities. The following statistics are compiled from the 1940 issues of the *Burma Trade Journal*:

VESSELS ENTERING BURMA PORTS IN 1940*

(Exclusive of intra-Burma traffic)

Ports	No. of Ships
Rangoon	528
Kyaukpyu	99†
Akyab	78
Bassein	45
Moulmein	30
Tavoy	27
Mergui	21
Total.....	828

* There may be some omissions from the *Burma Trade Journal* compilation of 528 vessels entering Rangoon (exclusive of Burmese coastal traffic). It will be noted from the next table that there were 1,377 steamers entering Rangoon from all ports in 1939-40. It is not believed that there were more than 250 or 300 entries of vessels from other Burma ports.

† This figure does not represent Kyaukpyu's relative importance. Its nearness to India may mean that numerous vessels stopped there for a few hours, but traffic from Kyaukpyu was not important.

The statistics in Table 29 are from other sources believed to be reliable:

Five of the vessels entering Rangoon in 1940-41 were of

32-foot draught, but about two-thirds were of medium size—three to seven thousand gross registered tons, suitable for carrying the rice, oil, and timber which comprised most of Burma's export tonnage.

TABLE 29
OCEAN-GOING VESSELS ENTERING RANGOON PORT
(Includes Burmese coastal traffic)

Vessels	1938-39		1939-40*		1940-41	
	Number	Net Tonnage	Number	Net Tonnage	Number	Net Tonnage
Steamers ...	1,423	4,298,813	1,377	4,254,154	1,248	3,510,316
Sailing vessels	161	12,189	141	11,407	239	17,675
Total	1,584	4,311,002	1,518	4,265,561	1,487	3,527,991

* See footnote to tabulation above.

Table 30, supplied by an official of one of the leading shipping companies, shows the growth of Burma's export trade with India and Ceylon from 1924-25 to the occupation of Lower Burma by the Japanese in 1942. The table gives the total annual shipments of rice, timber, and general cargo from the four chief Burma ports to ports on the coasts of India and Ceylon.

It will be noted from the foregoing figures that Rangoon exported to India more than twice as much on a tonnage basis as the next three ports combined. The depression of the 1930's had little apparent effect on the volume of this trade, although it greatly reduced the prices paid by foreigners for Burma's exports. The general trend of exports to India was upward, although Burma's total exports increased but slightly in this period. The highest figure for exports to India, strangely enough, was reached in 1933-34, and the second highest was that of 1939-40. In the latter year the total, 2,605,840 for the four ports, was approximately 50 percent above the corresponding figure for 1924-25.¹

¹ See also Tables 23 and 25 on pages 164 and 174-5 for details of import and exports in recent years.

TABLE 30
ANNUAL SHIPMENTS FROM CHIEF BURMA PORTS TO COASTS OF
INDIA AND CEYLON, 1924-42
(In long tons)

Year Ending June 30	Rangoon	Moulmein	Bassein	Akyab	Total
1924-25	1,037,372	141,967	49,240	231,969	1,460,548
1925-26	1,042,353	134,238	67,528	197,990	1,442,109
1926-27	1,016,185	151,766	89,649	200,753	1,458,353
1927-28	1,347,165	165,210	101,466	216,193	1,830,034
1928-29	1,348,255	143,299	165,236	267,515	1,924,305
1929-30	948,991	145,398	104,863	222,896	1,422,148
1930-31	1,251,201	180,719	178,419	247,057	1,857,396
1931-32	937,442	171,883	158,294	237,077	1,504,696
1932-33	1,207,980	178,313	253,775	268,794	1,908,862
1933-34	2,006,118	170,196	352,355	279,157	2,808,156
1934-35	1,759,195	152,915	319,430	262,540	2,494,080
1935-36	1,766,654	199,036	325,905	244,569	2,536,164
1936-37	1,567,314	168,718	331,288	238,216	2,305,536
1937-38	1,365,385	149,598	329,898	216,754	2,091,635
1938-39	1,798,855	177,823	373,381	238,339	2,588,398
1939-40	1,682,535	254,057	420,073	249,175	2,605,840
1940-41	880,718	171,361	291,969	212,802	1,556,850
1941-42*	529,216	71,164	146,826	58,326	805,532

* Nine months, i.e., to the end of March.

REASONS FOR RANGOON'S PROMINENCE

Reference to the map at the end of this study (facing p. 347) will show why Rangoon carries on such a large share of the country's foreign trade. It is at the southern tip of the Pegu Yomas, and hence there is communication by road and rail, without crossing large bodies of water, with Pegu, Taung-goo, and other towns in the Sittang Valley east of those hills, and also with Tharrawaddy and Prome—between the hills and the Irrawaddy. At no other point in Burma can be found such a combination of rail, road, inland water, and ocean navigation. Bassein, in the western delta, is on the less important side of the Irrawaddy, and is far from the Sittang Valley and Tenasserim. Moulmein likewise is south of the mighty Salween, which river is not very suitable for inland navigation. Moulmein is also far from the Irrawaddy, with which it lacks inland water communications. The 22 mile Twante Canal connects Rangoon with the Irrawaddy on the west, and the Sittang is

reached via the Pegu River, which joins the Rangoon River at Rangoon, and the Pegu-Sittang Canal. The meandering Pazundaung Creek, after flowing through rich paddy land, converges with the two rivers at Rangoon, with its contribution of paddy-boat traffic. The direct rail and coal routes up the Sittang Valley lead to Mandalay and the Burma Road.

Rangoon is 21 miles up the Rangoon River from the sea, and considerable dredging and river training are required to keep it navigable for medium-sized vessels. Particularly skillful navigation is required at the Hastings Sands, where the Pegu and Rangoon Rivers and the Pazundaung Creek come together. Most liners have to wait for favorable tides to enter or leave the harbor.

Freight handled at Rangoon for the last four years before the outbreak of war in Europe was as follows:

FREIGHT TONNAGE AT RANGOON HARBOR
(Thousands of long tons)

	1936	1937	1938	1939
Imports	1,325.5	1,318.9	1,430.2	1,400.3
Exports	3,891.1	3,940.1	3,959.8	3,579.2
Transshipments .	23.9	29.1	28.6	26.6
Total	5,240.5	5,288.1	5,418.6	5,006.1

The chief docks in the prewar period were the Sule Pagoda Wharves, 3,300 feet long and with an area of about twenty-one acres. There were seven berths, and vessels of about 28-foot draught could come alongside. These wharves had 29 cranes—steam, hydraulic, and electric, with capacities of from three to twelve tons. Several shiploads of goods could be stored in the galvanized-iron sheds, while tracks of the Burma Railways enabled the little four-wheeled freight cars to come alongside the sheds and the docks themselves. The other principal docks were the Brooking Street Wharves—rebuilt in 1938–39 and highly modern, covering seven acres and with a river frontage of 900 feet. Ships up to 29-foot draught could use the Brooking Wharves a few hundred feet downstream from the Sule Pagoda Wharves. Whereas the latter requir-

quarterly dredging for optimum efficiency, the Brooking Wharves required no dredging. Brooking had two berths and six cranes, one of which was of 40-ton capacity, operated along a rail track. Between the two main wharves was the Port Health Passenger Station. The new Ahlone Wharf, upstream from the Sule Pagoda Wharves, was under construction at the time of the Japanese invasion.

About two-thirds of Rangoon's sea-borne tonnage did not, however, pass over the wharves. It was handled by the 860 lighters, and loaded onto vessels which saved port fees by anchoring in the stream.

PREDOMINANT POSITION OF BRITISH SHIPPING COMPANIES

The outstanding shipping company was the British India Steam Navigation Company, Ltd. (B.I.S.N.), which sometimes appeared to own a majority of the steamers anchored in Rangoon harbor. Affiliated with the Peninsula and Oriental Steam Navigation Co., Ltd., it had three sailings per week to Calcutta, and one each per week to Singapore, the Coromandel Coast, and Madras. The vessels carrying on the afore-mentioned services were ordinarily of five to seven thousand tons gross registry. Larger vessels sailed every three weeks for China and Japan, and smaller vessels engaged in coastal trade with the Arakan coast and Chittagong, as well as with Moulmein, Tavoy, and Mergui. In addition to a weekly service to Tavoy and Mergui, there was a fortnightly service to the Tenasserim ports and Penang. The company provided occasional passenger sailings to the Andaman Islands and the west coast of India. Many cargo vessels of the B.I.S.N. served the entire Indian Ocean area. Thousands of Indians sometimes crowded the decks of the steamers, paying the modest fare of Rs. 14 to 16 for passage across the Bay of Bengal.

The Scindia Navigation Company, an Indian firm with headquarters in Bombay, is the only competitor of any importance, and did not seriously challenge the position of the B.I.S.N., as it accepted the rates, routes, etc., assigned by the B.I.S.N. through the "shipping pool." There were a few

small Chinese vessels plying as far as Rangoon, and the large Japanese lines maintained passenger and cargo service at about fortnightly intervals. In addition, such British lines as Bibby and Henderson,² plied between Burma and Europe, while freighters from Europe and the west coast of the United States called fairly frequently at Rangoon. Particularly after the opening of the Burma Road in 1939 a number of American, Russian, and other vessels called at Rangoon, but as indicated by the tabulation which follows, the B.I.S.N. and other lines registered in the United Kingdom carried on two-thirds of the total trade. It is doubtful if Burmans owned much of the tonnage classified as "British Burma" in the total. The figures for tonnage carried on vessels calling at Rangoon (excluding coastal trade) are as follows:³

Nationality	Imports (Long tons)	Exports (Long tons)
British (United Kingdom)	964,933	2,213,622
British Burma	12,212	791,738
British India	169,655	558,032
Foreign	188,415	349,235
Totals	1,335,215	3,912,627

Table 30 (p. 216) gives the breakdown of shipments from Burma to India and Ceylon according to Burmese port of origin. The same totals have been broken down differently by a reliable source to show the proportions of Burma's exports of "rice, timber, and general cargo" to India and Ceylon for the same period. Since there were virtually no Burmese companies engaged in this business and practically none of the continental European shipping companies traded between Burma and India, it is safe to conclude that nearly all tonnage not carried by Indian vessels was carried by British vessels and that almost all of the latter was carried by the British India Steam Navigation Company, Ltd. Similarly, the lion's share of the Indian traffic was carried by the Scindia Navigation

² The Henderson Line, with fortnightly service between Burma and the United Kingdom, was associated with the Irrawaddy Flotilla Company.

³ Annual report of the *Seaborne Trade of Burma*, 1939-40, p. 493.

Company, Ltd. Figures show that whereas in 1924-25 Indian vessels carried but 21 percent of the total trade, this figure increased to 27 percent the following year, and 29 percent in 1930-31. In 1933-34 it rose speedily to 34 percent, in 1937-38 to 36 percent; in 1940-41 to 38 percent; and to 44 percent in the final period of July 1941-March 1942. The increase after the outbreak of war in Europe may perhaps be attributed to the withdrawal of a larger proportion of British vessels than of Indian vessels for use between India or Burma and Europe. However, there is to be noted a distinct upward trend in the proportion of goods carried by Indian companies throughout the entire period under review.

There are, of course, many unknown factors which will influence Indo-Burmese shipping in the postwar period. At the present writing, however, prospects for an even greater Indian share in Indo-Burmese shipping seem bright. The controlling influence within the Scindia Navigation Company—that of Walchand Hirachand—is reportedly in a very strong financial position and is even branching out into the manufacture and assembly of motor cars.

LABOR

A general description of the labor situation in Burma, including that at the docks, is given in chapter xxi. Since the severe strikes and riots of 1930, stevedore coolie work has been divided between Indian and Burmese gangs on an approximately equal basis, but Indians are regarded as somewhat more efficient, and they are certainly more willing to endure low wages, chronic underemployment, and the exactions of *maistries* (foremen) than are the Burmans.

Burmans seldom if ever take service as members of the crews of ocean-going vessels, except for a few small sailing craft which hug the coast between Rangoon and Akyab. Indian seamen (mostly Chittagonians and Goanese) predominate at Rangoon, although European vessels (especially Swedish, Norwegian, German, etc.) sometimes had entirely European crews previous to the war.

SHIPBUILDING AND REPAIR

The Government Dockyards, at Dawbon across the Pazundaung Creek from Rangoon, were engaged in making small naval craft at the time of the Japanese invasion. The Rangoon Port Trust had extensive workshops below the Brooking Street Wharves for the servicing of the numerous small craft, dredgers, etc., under its control. The only important dockyards capable of building or repairing ocean-going vessels, however, were the Dalla Dockyards belonging to the Irrawaddy Flotilla Company, described in chapter x, under "Engineering," p. 148.

MINOR PORTS

As indicated by the tabulation (see p. 214) at the beginning of this chapter, Akyab, Moulmein, and Bassein all vied for second place among Burma's ports, and each port has stood second on various occasions. Akyab, chief town of Arakan on the west coast, is the only port other than Rangoon where large vessels may anchor alongside the docks. Its iron pier was 324 feet long, and was capable of accommodating vessels of 19-foot draught. In January 1947 the Survey of Departmental Activities reported progress in repairing the main Akyab wharf. Its four cranes were of one and one-half to seven tons lifting capacity. Akyab's only export of any importance is rice, and it is the oldest rice-exporting port in Burma. It is the center of considerable inland and coastal navigation in small vessels, and before and during the Japanese invasion a few motor roads were built to connect Akyab with other parts of the Arakan. However, it is unlikely that road traffic will equal water traffic in the foreseeable future. Akyab is also a minor and occasional stopping point for airplanes on the Calcutta-Rangoon run.

Moulmein is near the mouth of the great Salween River, and had moorings in that river capable of accommodating any required number of vessels. It had a 176-foot pontoon wharf capable of accommodating a vessel with 20-foot draught. Moulmein is an important center for the rice and teak trade, but as

the Salween is only navigable up to Hatgyi Rapids, about 55 miles from Moulmein, teak is the only export which comes down from the middle reaches of that river.

Bassein is on the Bassein River, at the western edge of the Irrawaddy Delta, and about 50 miles from the sea. During the spring tides, vessels with a maximum draught of 26 feet may anchor at Bassein. Rice, of course, is the chief export, although there is a small trade in teak as well. The rice mills have their own jetties, from which lighters serve the steamers.

The other ports are Kyaukpyn, at the northern end of Ramree Island; Andrew Bay (Sandoway), south of Ramree in the Arakan; and Tavoy, Mergui, and Victoria Point, between Moulmein and the southern tip of Burma. None of these ports is of much importance, except that wartime developments caused the Japanese, after building a railway across the Kra Isthmus, to make considerable use of Mergui as a transshipment point from small boats to highway for carriage to Moulmein.

SHIPPING UNDER THE JAPANESE

A considerable amount of rather successful demolition was carried out at the time of the British evacuation of Rangoon in March 1942, and British and American bombers visited the dock area throughout the period of Japanese occupation, so that when the city was recaptured by the British in May 1945, the entire dock area was badly damaged and in need of extensive overhauling. Japanese use of the port, except on a very small scale by large junks, had practically ceased by the middle of 1944—a tribute to Allied air power. During 1942-43, however, there were normally six to twelve ships in the harbor at a time, with a tonnage of thirty to sixty thousand. In addition, there were many small 100- and 200-ton wooden ships. One reason for the cessation of visits by large ocean-going vessels, in addition to Allied air attacks, was the disabling of at least two of the harbor's three dredgers fairly early in the period of Japanese occupation.

The coastal trade of junks of up to 100-foot length con-

tinued rather actively at least until the end of 1944. There were as many as nine active coastal vessels of that size in Rangoon at one time during November 1944; and Syriam, Moulmein, Tavoy, Mergui, and Khao Huagang (Siam) all had similar vessels.

One new development by the Japanese in the field of ocean navigation was the construction of considerable numbers of ocean-going wooden vessels at Rangoon, some of them powered by outboard motors according to one report. The only other development of any importance took place at Khao Huagang, across the estuary from the southern tip of Burma, but affected Burmese trade since traffic was via Mergui or other Tenasserim coast points. It is doubtful if this route will be of any importance now that normal trade with Rangoon is restored.

REHABILITATION

Rangoon harbor had to be restored to some extent by the Allied forces after the reoccupation of early May 1945, in order that further military operations might be carried on. To a large degree, however, boats were loaded and unloaded by lighters and small craft which anchored beside them in the stream. Floating docks were used and in one case the hull of a vessel lying on its side in the harbor served as an improvised dock.

An authoritative account of the reconstruction of port facilities under civilian management is the following extract from Mr. Hughes' speech to the Royal Central Asian Society.⁴

When the Port Commissioners took over the Rangoon Port from military control on 1st January 1946 they were faced with a formidable programme of work before the Government could begin to function efficiently for the proper reception of ships and custody of cargoes. Substantial denial and bomb damage had been done to the concrete quays and piled structures; demolished cranes, scuttled steamers and other under-water wreckage prevented the unrestricted use of wharf berths, important foreshores and slipways; depths alongside quays had been allowed to deteriorate by as much as 15 feet from the normal depth of 26 feet below

⁴ T. L. Hughes, *op. cit.*

L.W.O.S.T.; both workshop and stores had suffered severe bomb damage; all heavy moorings were sunk in 1942 as part of the denial measures; pontoons and bridges for inland traffic had to be lifted from the mud into which they had fallen when "demed" in 1942; and some 300,000 tons of steel scrap and other debris had to be collected and removed from the dock area.

Much still remains to be done, but in general the progress made toward complete rehabilitation of the port is ahead of schedule. . . . It says much for the organisation of the Rangoon port that, although hampered by a heavy reconstruction programme, the import traffic dealt with compares favourably with that of a good average pre-war year. Exports are unfortunately but a fraction of normal owing to the dislocated economy of the country.

By January 1947, it could be reported that "coastal shipping by schooners and country craft continues very active."⁵

FUTURE PROSPECTS

There is every reason to expect a fairly prompt restoration of Rangoon's port facilities to the prewar level. In fact, the tonnage of imports equaled prewar tonnage very soon after reoccupation, although exports, normally much greater in tonnage than imports, cannot reach the prewar level until the rice situation returns to normal. As indicated in chapter xiii, page 192, there is no reason to expect any drastic diminution in the volume of Burma's exports of rice, teak, mineral oils, and other raw products, once the rehabilitation of the country has been completed. A reasonably peaceful world is almost certain to demand all of such materials which Burma can produce and export. The Burmese standard of living was rising before the war, and Burmese imports of consumption goods are likely to be limited only by Burma's capacity to pay.

Should the Burma-Siam Railway be restored to operation it might divert a small amount of traffic from the Rangoon-Singapore sea route, but such a route might also help the general economic development of Tenasserim and increase Moulmein's sea traffic as much, in the long run, as it decreases Rangoon's traffic.

⁵ *Survey of Departmental Activities*, January 1947, p. 17.

If the Burma Road continues to be used extensively, the effect will doubtless be felt on Rangoon—the one port fitted to serve the Road. Similarly, the construction of a Burma-Yunnan railway would be of considerable significance to Rangoon as a port. China's bulky freight would probably continue to be sent to India and Europe by sea, but from central and southwestern China there might be classes of passenger, mail, express, and fast freight traffic where the time factor would cause travelers and shippers to choose the shorter and faster, if more expensive, Burma Road or Burma-Yunnan railway. Tungsten, bristles, tin, tung oil, and silk are commodities produced in China of sufficient value to justify shipment to Europe by the more direct Burma route. Of course, there is also the possibility that improvements in aviation will make it still more practicable to ship all such commodities directly from China to India and the West by air, with only an intermediate stop (if any) in northern Burma.

Whether or not Burma's chief port obtains a windfall of extra trade from China, its future seems quite secure. There are millions of acres of cultivable but as yet uncultivated land,⁶ and the population increased 14 percent between 1931 and 1941. The standard of living and also the standard of literacy exceed those in most Asiatic countries. Given domestic peace and order, Burma should have much greater trade with the rest of the world after the rehabilitation period than ever before. Rangoon harbor should be able to handle any prospective increase in traffic.

⁶ Such land is ordinarily of poorer quality than land now cultivated, or else it requires drainage or other expensive improvements. Population pressure, however, may induce the necessary development.

XVII

ROAD TRANSPORT

ECONOMIC SIGNIFICANCE

ROAD TRANSPORT in Burma was largely transport by trails and pack routes, without benefit of wheels until the advent of the motor vehicle. At least, such was the case in the mountainous areas, particularly in overland communications with China—of which Marco Polo is believed to have availed himself. In the flat plains of Central Burma, of course, carts have cut deep ruts for centuries.

Within the past twenty years a fair network of all-weather roads has been completed to connect Rangoon with the China border (and hence with Kunning and Chungking) as well as with most towns of any size east of the Irrawaddy. Other new roads have furnished connections with Siam through the Shan Plateau and via a Japanese-built road from Moulmein to Bangkok by a more direct route. In addition, many thousands of miles of roads are usable during the dry season only. In 1938 there were about 6,000 miles of surfaced, all-weather roads of a total of 17,000 miles of "vehicular roads." Another five or six thousand miles were suitable for motor traffic in the dry season. However, the present situation is far different, since there was considerable road building before the evacuation of Burma, and many military roads have been built by the Japanese as well as by the Allies since that time.

Burma's highway system is largely competitive with the railways—the chief lines of each being from Rangoon to Mandalay, up the Sittang Valley, and from Rangoon to Prome, passing through almost exactly the same towns en route. Moreover, the Mandalay-Lashio, Thazi-Shwenyaung, and Thazi-

Myingyan railway lines are paralleled by competing roads. However, the roads serve as feeders to the railways at such points as Lashio, Shwenyaung, Toungoo, Kyaukpadaung, Taungdwingyi, and Prome. Wartime highway developments will probably feed postwar traffic to the railways at Myitkyina and Ye-U also.

International routes were of negligible economic significance prior to the opening of the Burma Road early in 1939. Burma's centuries-old caravan trade with China was badly hit by the opening of a rail route to Kunming from the sea at Haiphong, French Indo-China, and the 1936 caravan trade between Bhamo and Yunnan was a mere Rs. 96,000 or about \$35,000. Lack of highways (and railways) to India and China was variously attributed to (a) expense of construction and smallness of prospective traffic, (b) Burmese fear of further stimulating Indian and Chinese immigration, and (c) pressure of shipping companies desirous of maintaining their monopoly of India-Burma traffic.

CHIEF ROUTES

The Burma Road.—This route is all-weather the entire way from Rangoon to Kunming, and about 730 miles of it, from Rangoon to the Chinese border, lies in Burma. It encounters practically no hills for the first 440 miles to Mandalay via Pegu, Toungoo, Pyinmana, and Meiktila. The road turns east at Mandalay and soon begins to climb, reaching pleasant Maymyo, Burma's summer capital, in 42 miles, and Lashio, an important Shan trading center, in another 134 miles. It is muddy, but nevertheless "all-weather" between Maymyo and Lashio. Wanting, on the Chinese border, is 113 miles beyond Lashio. The road rises to an elevation of about 5,000 feet near Kutkai and falls to 3,000 feet at the border, passing over rolling hills en route. This section was rather suitable for two-way traffic before the war, being surfaced with crushed rock and tar.

Rangoon-Prome-Yenangyaung-Meiktila. — This second most-traveled road follows the railway line to Prome and the swings away from the Irrawaddy, to return to that river a

Magwe and the oil fields. Prome is 178 road miles from Rangoon, and Magwe—a divisional headquarters—is another 152 miles north. High-speed traffic could use the road as far as the oil fields, but the section from there to Meiktila is not as well constructed or maintained.

Myingyan-Meiktila-Taunggyi-Siam.—This east-west route then crosses the Burma Road at the important junction of Meiktila, and connects Myingyan, on the Irrawaddy, with the chief towns of the Southern Shan States, and with northern Siam. East of Loilem (which in turn is east of Taunggyi) the road is not all-weather. The section between Kengtung, in the eastern Shan States, and the Siamese border, was very poor before the war, but was improved by the Japanese and Siamese. The road reaches the Siamese State Railways at Lampang.

Sagaing-Shwebo-Kalewa-Imphal.—Parts of this route were used by a very large proportion of the half-million evacuees in 1942, and also by the British Fourteenth Army in its re-entry into Burma in 1944-45. Although the vast majority of the 1942 refugees walked along this road, some rode in large buses from Kalewa to Tamu. Both Japanese and British army engineers improved this road during the war, but civil authorities have not kept it up since the conclusion of hostilities.

The Stilwell Road.—The Leda or Stilwell Road starts from the Assam railhead at Ledo, travels down the Hukawng Valley, and crosses the Irrawaddy at Myitkyina, after which it continues down the east bank of the river to Bhamo. From Bhamo there was a prewar, all-weather road through Namkham to a junction with the Burma Road near Muse. Built at enormous cost, for military rather than economic reasons, it remains to be seen whether this road will be kept up in the postwar period. It has been officially abandoned by the American Army forces, as British civil authorities declined to undertake the great expense of maintaining it. The route passes through some very rich agricultural land, but that land is often subject to heavy floods, and the road has to run on a high embankment

expensive to maintain as well as expensive to build. If Burma's population continues to expand, it may be expected that the Hukawng Valley will eventually be well peopled and its rich land cultivated, in which case this road may be rebuilt or duplicated. This may not take place for some years, however, particularly in view of Burma's great need of rehabilitation in the areas already heavily populated.

Pegu-Thaton-Moulmein-Tavoy-Mergui.—In the prewar period there was no road connection between Tenasserim and the rest of Burma, but the Japanese completed the road link east of Pegu during the war. A prewar road, 424 miles in length, ran from Kyaikto, northwest of Moulmein, to Mergui. In 1942 the Thanbyuzayat-Ye section of this route was little more than a cart road, but the Japanese improved it for military purposes. Hence a road which is "passable" the year around now exists from Mergui, near the southern tip of Burma, to the Pangchau Pass, at the extreme northwestern corner of the country and a few miles from Ledo. But several hundred miles of this road owe their existence to the war and may not continue to be passable unless civil authorities give them a high priority among Burma's clamant transportation needs.

Thanbyuzayat-Siam.—The Japanese built a highway beside the Burma-Siam railway line in 1942-43.

Hsipaw-Loilem-Loikaw-Mawchi-Toungoo.—This route, most of which runs north and south, lies in the Shan States and Karenni. It links Kemapyu, on the Salween, with the rail and road center of Toungoo, via the great Mawchi Mines. It is an all-weather road of fairly recent construction, although with large numbers of hairpin curves, and it served the Japanese well in their invasion of Burma in 1942. At Hsipaw it joins the Burma Road.

Other routes.—There are over 400 less important routes which carry motor traffic, at least in the dry season. Half of them are more suitable for carts than for motor vehicles, however. The Japanese improved the British-built road between the important Irrawaddy port and rail terminus of Prome at Taungup, in Arakan. They have also built roads inland from

the Arakan coast, as well as a series of military roads in Upper and Lower Chindwin Districts. Perhaps such roads will be one of the chief mementos of the brief Japanese period of Burmese history. Bassein, Maubin, and other Irrawaddy Delta towns are not connected by road with the rest of Burma, but have a few miles of road in the immediate vicinity. They rely chiefly upon inland water transport.

The chief roads were kept up by the Public Works Department, whereas local authorities kept up (or in some cases failed to keep up) local feeder roads. The P.W.D. roads ordinarily had adequate masonry bridges. The road mileage on March 31, 1938, was officially given as follows:

ROAD MILEAGE IN BURMA

	Miles
Total bituminous, metaled, and surfaced.....	6,263
Earth, gravel, etc., motorable subject to weather.....	6,380
Earth, gravel, etc., not motorable.....	4,522
Total vehicular roads.....	17,065

The present figures would probably be several thousand miles greater.

MOTOR VEHICLE STATISTICS

Burma has not yet reached the "motor age" by Western standards, except as military vehicles during the war assisted in making the country a battleground. There were less than 20,000 motor vehicles registered in Burma at the end of 1941. However, there were, in addition, many Burma Road trucks which came as far as Lashio, and are not included in the 3,247 trucks which help to make up the over all figure of 19,806. Buses numbered 3,059, motorcycles 768, and motorcars and taxis the remaining 12,372. Most motor vehicles were concentrated in a few large towns—chiefly in Rangoon.

Most trucks and buses were American made (Chevrolets, Fords, and Dodges). Passenger cars were about equally divided between the less expensive American (and Canadian) models and the lighter British cars. Just before the outbreak of war in Europe, the German Opel car became rather popular in Burma.

AUTOMOBILE SHOPS AND MAINTENANCE EQUIPMENT

Prior to the opening of the Burma Road, there were only a few large and modern motor-vehicle maintenance shops, chiefly those belonging to Rangoon car distributors such as re were
ordinarily
staffed by Burmans, in district headquarters and towns throughout the country. With the opening of the Burma Road, and particularly with the grant of American Lend-Lease aid to China, large first-class shops were installed at Rangoon, Toun-goo, Mandalay, and Lashio. Adequate quantities of spare parts were stored in all these depots.

Burmese technical skill was demonstrated in the field of automotive repair, and American supervisors in the Lend-Lease shops spoke highly of their Burmese workmen. This demonstration of Burmese ability to master modern techniques suggests that any future modernization and industrialization of Burma can be carried out chiefly or wholly with indigenous labor and skill.

TRANSPORT UNDER THE JAPANESE

A Transport Bureau was set up in August 1942 for the purpose of facilitating freight transport for civilians. Its success in that direction appears to have been negligible, although there were occasional bus services between Rangoon and Letpadan, Rangoon and Pegu, Letpadan and Prome, etc. It is doubtful if the Transport Bureau had anything to do with passenger transport. Bus rates were exorbitant. A ride from Letpadan to Rangoon at the beginning of 1944 cost up to Rs. 50, against a prewar rate of about one rupee. Some of the buses were run by Japanese, who were able to secure fuel from the military. In other cases petrol from rubber was used for fuel.

Allied attacks on Japanese road transport in Burma were mainly indirect. Prevention of import of vehicles or petrol, and destruction of petroleum plants in Burma soon sufficed to reduce highway traffic much below its not very high prewar level.

AUTOMOBILE SHOPS AND MAINTENANCE EQUIPMENT

Prior to the opening of the Burma Road, there were only a few large and modern motor-vehicle maintenance shops, chiefly those belonging to Rangoon car distributors such as Autocars (Ford) and Watsons (Chevrolet). There were numerous small shops, often owned by Burmans and ordinarily staffed by Burmans, in district headquarters and towns throughout the country. With the opening of the Burma Road, and particularly with the grant of American Lend-Lease aid to China, large first-class shops were installed at Rangoon, Toun-goo, Mandalay, and Lashio. Adequate quantities of spare parts were stored in all these depots.

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The bullock cart was much used by the Japanese in maintaining military lines of communication. The result, of course, was a considerable reduction in the number of animals available for agriculture, with consequent hardships on the farmers.

Japanese road-building efforts in Tenasserim, the Shan States, the Chindwin region, and Arakan have been noted above.

REHABILITATION

By September 1946 it was still reported¹ that of Burma's 7,000-odd miles of all-weather roads, the best 30 percent required heavy repairs; another 40 percent were severely damaged; and the remainder were neglected. Only minor repairs were carried out in the first year and a half of reoccupation, the reconditioning program getting under way only in the fall of 1946.

The *Burma Gazette* of June 1, 1946, carried the "Burma Road Transport Order, 1946" setting up a board to "operate, regulate and control" road traffic. It consisted of officials and nonofficials with rather broad powers. Mr. Hughes described the situation as follows.

Road transport run by private enterprise is confined to passenger buses which survived the Japanese occupation and are now operating on the shoe lace and string maintenance basis. To handle all forms of Government road transport the Road Transport Board was conceived.

The greater portion of the Road Transport Board fleet consists of vehicles taken over from CAS (B). . . . Latest reports indicate that a large number of the vehicles will have to be scrapped as it would be uneconomical to repair them.

The total arrivals of trucks, etc., from the United Kingdom amounted on 31st May 1946 to 1,391 vehicles.²

The Road Transport Board does not appear to have been a success, for in April 1947 the Government of Burma decided to close it down, effective August 1, for:

"Now accused of gross mismanagement of its affairs, the Road Transport Board for the financial year ending September 1946 was

¹ Mr. T. L. Hughes to the Royal Central Asian Society, *op. cit.*

² *Ibid.*

run at a loss of over Rs. 1,700,000. The balance sheet for the year 1946-47 shows an estimated loss of nearly Rs. 2,500,000 a Government press release stated."³ An official source "added that the Burmese Government hoped to reconstitute the Board along other lines and to absorb some of the dismissed personnel."⁴

Meanwhile the *Progress Report of the Building and Road Department* for December 1946 tells of progress in collecting materials "for an intensive programme of road repair in all Districts; resurfacing has been commenced and patch repairs are being continued on nearly all roads."

It was still possible to travel the Burma, Stilwell (Ledo), and Imphal Roads in the dry season of 1947. The (London) *Times* correspondent cabled from Rangoon on April 7 that:

According to travellers just returned from northwest Burma, the famous Ledo Road, in spite of lack of maintenance, is still in excellent condition and the journey from Myitkyina to the railhead in Assam can be completed by car comfortably within 12 hours The Burma section of the famous Burma Road suffered through lack of maintenance during the Japanese occupation, but it is now being brought up to its prewar condition. There is some bus traffic with China and recently a quantity of tin ore, sold to America by China under reverse lend-lease, came out by lorry.

Another road which played an important part in the Burma Campaign, that from Tamu down the Kabaw valley to Kalewa and Central Burma, can still be traversed. Where the foundation was well laid its temporary "bit-hess" surface is reported to be still in sound condition.

The policy to be adopted on these three strategic roads linking Burma with China and India will be one of the many questions requiring a decision by the Burmese Government after the elections.⁵

Other reports indicate that the hessian covering of parts of the Kalewa-Imphal Road has rotted away, and considerable upkeep will be necessary to keep the road open after the 1947 monsoon. At a meeting of the Myitkyina Chamber of Commerce, October 29, 1946, a strongly-worded resolution was passed in favor of government action to keep the Stilwell Road

³ *Monday Monitor*, April 21, 1947.

⁴ *Ibid.*

⁵ *Times*, (London), April 8, 1947.

open and prevent Northern Burma from relapsing into its prewar economic isolation. A traveler in the spring of 1947 reported that for twenty miles the road had eroded so badly his jeep had to take to the elephant grass of the flat land in the vicinity, and that considerable upkeep would be necessary in the very near future to keep the road passable.

FUTURE PROSPECTS

Burmese political leaders have expressed some interest in maintaining rail and road connections with Siam, and it is possible that a self governing Burma will take effective measures to do so. The Burman has proved himself a capable motor mechanic and a good driver, and the future economic development and reconstruction of Burma should witness a great increase in the mileage of all-weather roads and in the number of vehicles using them.

The history of railroad building in the western United States of America has seemed to show that when transportation is made available to an undeveloped but potentially rich region, the population soon moves in and develops agriculture, trade, and sometimes industry as well, so that the initial investment is repaid handsomely in the long run. With a large and rich area along the Stilwell Road capable of supporting a population many times that now inhabiting this region, the far-sighted nation-builder might readily decide to invest a considerable sum in keeping open the only feasible artery of commerce through this area.

Latest reports indicate that the Chinese are permitting their end of the Burma Road to deteriorate, and that some sections are practically impassable to motor vehicles other than jeeps. Perhaps this may be explained by China's civil war, and the lack of facilities in Burma to forward to Rangoon, or import through Rangoon, sufficient goods to justify the expense of keeping up this road. Such considerations do not necessarily prove that a happier and more prosperous Burma and China will not undertake, in due course, to keep the Burma Road in operating condition.

XVIII

RAIL TRANSPORT

ECONOMIC SIGNIFICANCE

THE Burma Railways were built rather rapidly in the years immediately following the opening of the Suez Canal in 1869. They were thus able to help cope with the fast growing export trade and the corresponding flow of imports, as well as with the transport of Dry Zone products to the monoculture area of Lower Burma. By the end of the century, when the great Gokteik Viaduct was built on the Mandalay-Lashio branch, it was thought that there would be a rail link with China at the Kunlong Ferry and that Rangoon would thus be an outlet to the sea for southwest China.

Since Burma had had water transport for centuries, it was natural that the railways should be built to serve areas not served by the inland water transport system. On the other hand, highways came a generation later and have only recently been a serious threat to railway revenues. The Burma Railways never parallel the Irrawaddy for long stretches, although they touch it at Henzada, Kyangin, Prome, Myingyan, Myinmu, Sagaing, Mandalay, Katha, and Myitkyina.

A considerable portion of Burma's rice crop is grown in the Delta and in other areas close to water transport, but a fair proportion is also grown in the Sittang Valley and along the Prome and Pegu-Moulmein lines of the railway. There is a differential in favor of "boat paddy" against "rail paddy," since the latter comes from higher and less fertile soil and is of slightly lower quality.

Burma's petroleum uses the railways to a very small extent, except, of course, for the internal distribution of the finished product. The oil companies owned a pipe line and fleets of river tankers which carried most of the country's oil. Likewise, most of the teakwood reaches the ports via the main rivers, although occasional shipments of logs may be seen on the railways. A very large item of rail freight consisted of the products of the Bawdwin and Mawchi Mines. Haulage of Bawdwin Mines products in particular calls for a haul almost the entire length of the system and has proved highly lucrative. The opening of the Burma Road in 1939 brought much additional traffic to the Burma Railways, with a haul about 13 miles longer than that involved in the Bawdwin Mines traffic. In fact, the year 1939-40 saw the end of a succession of nine successive deficits. The improvement was largely due to the additional Burma Road traffic. In 1940-41 no less than 180,944 long tons of goods were shipped from Rangoon to Lashio, bound for China. The railway revenue from this traffic amounted to Rs. 5,353,753. There was considerable congestion along the railway with the sudden increase in traffic, particularly as long trains were impossible on the steep grades of the Mandalay-Lashio section, and it took up to a week for goods trains to reach Lashio from Rangoon. There was a much smaller return traffic in tung oil and other commodities from China.

The Burma Railways carried 19,758,079 passengers and 4,030,653 tons of freight in 1940-41. Rice, cotton, vegetable oils, and other indigenous agricultural products provided 75 percent of the total freight revenue, while lead and miscellaneous mineral and other indigenous products provided 16 percent.

CHINESE LINES

Prior to the opening of the Burma Siam railway line in November 1943, Burma had no international railway connections. The meter gauge was the only gauge used, except for the 40 to 50 miles of two-foot gauge of the Burma Corporation between Bawdwin, Nanttu, and the Burma Railway

junction of Namyao. In 1940, Burma's railway mileage was 2,060, against 1,814 for French Indo-China, and 2,136 for Siam.

The main line of the railway, like the main motor road, followed the Sittang Valley from Rangoon through Pegu, Toungoo, and Pyinmana to Mandalay. It was 386 miles in length, against 440 miles for the highway. Before the war it was double-tracked from Rangoon to a point north of Toungoo, or approximately half the total distance.

The other main line runs from Rangoon to Prome, a distance of 161 miles by rail, against 178 by road. Prome is on the east bank of the Irrawaddy, and passengers and mail for the oil fields normally went to Prome by rail and completed the journey by Irrawaddy Flotilla Company steamer. Insein, Tharrawaddy, and Letpadan are the principal towns on this line, which traverses generally well-cultivated country.

From Pegu, 47 miles north of Rangoon, an important branch runs to Martaban with a ferry across the river to Moulmein. Until recently this was the only feasible land route between Rangoon and Moulmein, there having been no road connection. A branch runs from Moulmein south about 100 miles to Ye, and the 267-mile Thanbyuzayat-Ban Pong (Siam) line takes off from this branch.

Another important branch leaves Letpadan, on the Rangoon-Prome line, and with a ferry at Henzada, connects with Bassein, in the western Irrawaddy Delta. A branch line runs up the west side of the Irrawaddy from Henzada to Kyangin.

Farther north on the main line, a branch from Pyinmana reaches Taungdwingyi and Kyaukpadaung, a few miles east of the oil fields. Another branch runs from Thazi, 306 miles from Rangoon, to Shwenyaung, in the Southern Shan States, 12 miles west of Taunggyi, capital of the Federated Shan States. Still another line branches northwest from Thazi to reach Myingyan on the Irrawaddy River, just above its confluence with the Chindwin. The Myingyan-Paleik Cord connects Myingyan more directly with Mandalay. The Lashio Branch, noted above, runs from Mandalay across hilly country to

Lashio, important Burma Road town not far from the Bawdwin Mine. A line about 400 miles long crosses the Ava Bridge, just south of Mandalay on the Irrawaddy, and turns north to Myitkyina, via Sagaing, Shwebo, and Mogaung. A branch from this line leaves it at Ywataung, near Sagaing, and after touching the Chindwin River at Monywa and Alon, circles back to Ye-U. Another short branch connects Naba Junction with the river town of Katha.

A monsoon country like Burma must necessarily have many bridges, but the Ava Bridge is the only one across the Irrawaddy, while the Mokpalin Bridge is the only rail crossing of the Sittang. There are no railway bridges across the Salween or the Chindwin. The Myitnge Bridge, 377 miles from Rangoon or nine miles south of Mandalay, was 680 feet in length, consisting of six spans, and was repeatedly bombed by the Allies and repaired by the Japanese. The outstanding obstacle to railway construction is probably the mountainous nature of the Shan States, and the two branches in that area were constructed at much greater cost per mile than the rest of the system. A second important natural obstacle is the periodic floods which have often washed away sections of track, particularly between Pegu and Pyu.

Locomotive sheds were located approximately every hundred miles. Main-line bridges could carry up to thirteen tons per axle, against ten tons on branch lines. The formerly unimportant Moulmein-Ye line had bridges with eight tons as the axle limit. The Ava Bridge was of the seventeen-tons-per-axle standard. Rails used on about 100 miles of the main lines were of the 75-pound class, against 60-pound rails on most of the remaining track. Maximum permissible speed (prewar) was 45 miles per hour.

TRAFFIC COMPARED WITH SELECTED COUNTRIES

In carriage of both freight and passengers, Burma outranked Siam, Indo-China, and Malaya, but was second in south-east Asia to Indonesia. If population is considered, Malaya ranks first and Burma second. The following tabulation of

traffic and density of freight vehicles¹ gives a rough comparison of the prewar position:

TRAFFIC AND DENSITY OF FREIGHT VEHICLES

	Metric tons Freight	Number of Passengers	Number of Freight Cars per Kilometer of Track
Burma, 1940-41	4,095,143	19,758,079	2.91
Siam, 1938-39	1,677,982	5,725,998*	1.18
Indo-China, 1939	1,793,748	17,187,556	0.89†
Malaya, 1938	1,886,700‡	9,923,000	3.15
Indonesia, 1938	9,717,000	66,717,000§

* Interurban lines are omitted, and therefore passenger figures are not strictly comparable with those of other countries included in the table. Last column for Siam refers to freight cars in 1928, later figures being unobtainable.

† There is no separate breakdown for freight cars on the Indo-Chinese and on the Chinese side of the Haiphong-Kunming line. All are included in this figure, which is therefore slightly larger on that account.

‡ Revenue freight only.

§ Not available, but in view of the much greater amount of traffic carried per mile, it is probable that the figure is greater than that for any of the other four countries.

FREIGHT TRAFFIC

Freight provided about two and a half times as much revenue as passenger traffic. The chief items were rice and other agricultural products, minerals, timber, and miscellaneous imports. Table 31 gives a very inadequate breakdown of part of the freight traffic on the Burma Railways.²

TABLE 31
FREIGHT TRAFFIC ON BURMA RAILWAYS,
APRIL-SEPTEMBER

Commodity	1940		1939	
	Tons	Rupees	Tons	Rupees
Fuel for the public	59,131	564,783	58,209	529,951
General merchandise	1,220,853	11,691,458	1,304,597	11,942,530
Livestock	5,292	172,899	4,954	164,592
Military traffic	3,509	23,685	3,760	21,563
Railway materials	422,898	530,155	486,954	533,609
Miscellaneous earnings .....	.....	21,491	.....	30,350
Refunds .....	.....	60,083	.....	38,234
Totals	1,731,683	12,944,388	1,858,474	13,184,311

¹ Compiled from official reports, first published in *Basic Problems of Relief, Rehabilitation and Reconstruction in Southeast Asia* (Oxford University Press, Bombay, 1946).

² *Burma Trade Journal*, January 1941.

Practically all freight was carried on small four-wheeled goods wagons, the rice very often being loaded into box cars loose.

PASSENGER TRAFFIC

The vast majority of Burma Railways passengers traveled in third class, with wooden benches, no fans, and a minimum of space per passenger. Even in peacetime there was not always room for all passengers with third-class tickets. First- and second-class passengers had rather comfortable accommodations, with compartments for every four passengers. Normally there were but one or at most two passengers per first-class compartment, with fans, lights, comfortable sleeping accommodations, and washroom. Second-class passengers paid three times the third-class fare, per mile, and first-class passengers paid double the second-class rate. Even at that it is doubtful if the railway received as much revenue, per carriage, from upper-class as from third-class traffic.

FINANCIAL RETURNS

Burma Railways earnings continued during the depression with only a moderate fall from the 1929-30 level. However, the drop was sufficient to cause a deficit in 1930-31, which continued to and included 1938-39, and ended only when the Burma Road traffic gave a fillip to earnings. The earnings recorded from 1929-30 to 1940-41 are given in Table 32 (p. 241).

The Government of India built the Burma Railways, and little if any of the capital cost had been repaid by the time of separation of Burma from India on April 1, 1937. At that time Burma owed India a total of approximately Rs. 584,500,000, of which no less than Rs. 344,482,000 consisted of the railway debt.³ If the Burma Railways are to be required to pay interest on the original railway debt in addition to replacing most of the rolling stock, railway workshops, bridges, etc., their financial position will not be an enviable one. However,

³ In some statements of Government of Burma indebtedness this latter sum is omitted, since it is in a sense primarily an obligation of the state-owned Burma Railways.

the Government may be expected to restore the railways at least to their prewar state, regardless of such difficulties.

TABLE 32
EARNINGS OF THE BURMA RAILWAYS*
(In thousands of rupees)

Year	Coaching	Goods	Miscellaneous	Gross Earnings
1929-30	15,849	31,732	1,658	49,239
1930-31	13,450	28,000	1,429	42,879
1931-32	11,427	25,126	1,537	38,090
1932-33	10,694	21,741	3,139	35,574
1933-34	9,886	25,218	2,566	37,670
1934-35	10,092	26,550	2,288	38,930
1935-36	10,425	24,959	1,955	37,339
1936-37	10,903	25,435	1,969	38,307
1937-38	10,387	25,348	1,713	37,448
1938-39	9,663	26,389	1,430	37,482
1939-40	10,159	27,659	1,393	39,211
1940-41	11,508	30,931	1,424	43,863

* *Burma Trade Journal*, Vol. IV, No. 9, September 1941, p. 334.

LOCOMOTIVES AND ROLLING STOCK

The Burma Railways, like railways in America and elsewhere, met the depression by permitting the total of locomotives and rolling stock to decline. This was partially balanced, in the case of locomotives, by the purchase of a few very powerful locomotives (tractive effort 19,729 pounds and 22,108 pounds) to replace a larger number of worn-out engines. Thus, total tractive effort, as shown by Table 33, did not decline very greatly. Moreover, the additional speed of trains, due to the purchase of better locomotives, economized rolling stock and prevented carrying capacity from declining in proportion to the total of passenger and freight vehicles.

Burma teak was, of course, largely used in the construction of rolling stock, but underframes were mostly imported. The latest coach bodies were of teak, constructed on a braced steel angle framework. All public passenger vehicles were fitted with vacuum brakes and lighted by electricity. Approximately half the four-wheeled wagons on the line had a capacity of 11½ tons, the remainder being of 15 tons capacity, the bodies of the latest examples being constructed of galvanized sheeting elec-

TABLE 33

LOCOMOTIVES AND ROLLING STOCK OF THE BURMA RAILWAYS*

Stock	1929-30	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37	1940-41
Locomotives:									
Number	422	431	418	410	404	382	392	379	358
Total tractive effort									
in pounds	6,729,183	7,118,363	7,117,192	7,076,459	7,024,211	6,917,808	7,042,287	6,777,893	6,486,364
Coaching stock:									
Passenger carriages,									
number	1,162	1,147	1,128	1,085	1,049	1,003	927	867	762
Seats, 1st class	1,929	1,890	1,825	1,768	1,734	1,716	1,716	1,627	1,564
Seats, 2d class	2,808	3,064	3,164	3,036	3,046	2,908	2,908	2,864	2,734
Seats, 3d class	59,620	53,807	53,229	52,049	50,483	47,882	44,137	38,508	36,503
Other coaching vehicles,									
number	362	332	319	359	383	387	379	376	384
Goods stock:									
Wagons, number	8,671	8,663	8,492	8,266	8,238	7,778	7,620	7,618	7,583
Capacity in tons	111,649	113,896	111,743	110,728	110,465	107,179	104,786	104,756	129,179†
Other goods, vehicles, etc. .	2,230	2,371	2,389	2,386	2,428	2,483	2,124	2,086	2,066

* Source: Annual Report of the Burma Railways, 1929-30, page xxv; and subsequent years.

† This figure is subject to question. It was compiled from available data which included some items which were barely usable.

trically welded to a steel angle framework. Bogie tank wagons (petrol, oil, and molasses) numbered 26, and four-wheeled tanks 42, all but seven of the latter being water tanks.

RAILWAY WORKSHOPS

The Insein and Myitnge workshops were described briefly in chapter x, pages 149–50, above. Locomotive repair was concentrated at Insein, and coach building and repair at Myitnge.

RAILWAY STAFF

The Chief Railway Commissioner, a civil servant, was head of the Burma Railways, and was assisted by a Railway Board consisting of: (a) a government-appointed financial member, (b) secretary to the Commerce Department, (c) a representative of the Burma Chamber of Commerce (European), (d) a representative of the Burmese Chamber of Commerce, (e) a representative of the Burma Indian Chamber of Commerce, (f) a representative of the Chinese Chamber of Commerce, and (g) two other members nominated by the Governor.

The Secretary of the Railway Board was a senior railway official. Of the 96 senior officials in 1940, 62 percent were Europeans, as against 16 percent Burmas. Subordinate staff numbered 21,906 in 1938–39 against 21,523 in April 1947. Indians outnumbered Burmans 3 to 1 before the war, the racial breakdown being:

Race	Officers	Non-gazetted Staff
Europeans	62 percent	0.1 percent
Anglo-Burmans }	15 percent	2.6 percent
Anglo-Indians }		
Burmans	16 percent	21.1 percent
Indians	7 percent	74.8 percent
Other races .....	.. percent	1.4 percent
Total	100 percent	100.0 percent

Burmans were being recruited, particularly for high posts, at the time of the Japanese occupation. This was due largely to political pressure, but in time it would undoubtedly have

served to increase greatly the proportion of Burmans among the superior staff. Anglo-Burmans and Anglo-Indians held a very high proportion of the better "non gazetted" posts, such as the positions of station master, dispatcher, guard, and engine driver.

WARTIME DISLOCATIONS

The war has almost completely wrecked the Burma Railways. It is unnecessary and of relatively little future interest to specify the destruction, so the following merely summarizes it. Two-thirds of the railway locomotives were destroyed by bombing, or demolished by the British at the time of their evacuation, and practically all the remainder were destroyed by Allied bombing. Much rolling stock was destroyed, although not in as high a proportion as the locomotives. Bridges were destroyed and rebuilt innumerable times, but the makeshift temporary structures put up under military necessity will not be suitable for normal peacetime operations. The Insein workshops were rather effectively demolished before evacuation in 1942, but were restored to partial operation by the Japanese. They were almost wiped out again by bombing at the end of 1943, but again restoration was sufficiently complete to justify another Allied bombing attack in November 1944. As one means of alleviating the dislocations caused by Allied destruction of railway bridges, the Japanese commenced using, in 1944, a "Loco-Truck" which could be promptly converted from a rail motor to a truck running on rubber tires, and capable of running on the roads until a bombed out section of the railway was passed. This truck was said to be capable of pulling from eight to ten four-wheeled freight cars on the level.

Naturally, most wartime traffic was devoted to the needs of the Japanese military, and practically no civilian freight was carried. However, a fair number of Burmese civilians managed to ride on the trains, enduring hardships unimaginable even in third class during peacetime.

One line of the double track, which stretched from Rangoon to a point north of Toungoo, was removed by the Japa-

nese. In fact, the British, just prior to evacuation, removed part of the double track and part of the Pegu-Kayan line for use on the Lashio-Kunming line. Presumably the rails removed by the Japanese were used on the new link with Siam.

WARTIME RAIL DEVELOPMENTS

The outstanding positive achievement of the Japanese was the completion, in November 1943, of the 267-mile link with Siam. This line takes off from the Moulmein-Ye line at Thanbyuzayat, 35 miles south of Moulmein, and follows a gentle valley to Three Pagodas Pass, at an elevation of about 850 feet, on the Siamese border. It then descends the Kwe Noi Valley, passing through Kanchanaburi, and connects with the Bangkok-Singapore line at Ban Pong. This line made possible the import of locomotives from Malaya and Siam. Until Allied bombing became too frequent and accurate, carriages were seen at Moulmein marked "Moulmein-Pnom Penh," and it was then quite possible for trains to proceed from Moulmein across Siam to the Mekong River, in southern Indo-China.

Another and much less important railway development was the construction of a line across the Isthmus of Kra, from Jumbhorn, on the main line of the Siamese State Railways, to Kao Huagang (Kao Fachi) near Victoria Point, southern tip of Burma. This line is entirely in Siamese territory, but its economic significance extends to Burma. It was an alternate line of communications between Malaya and Burma, the Three Pagodas Pass route being the chief route. Goods were brought by rail to Kao Huagang and then shipped by water to Mergui or Moulmein.

POSSIBLE POSTWAR DEVELOPMENTS

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was financed by the British Government - not by the Government of Burma. Sir John Rowland, Chief Railway Commissioner for Burma, was in charge of construction of the Burma end of the road. This route would be shorter than the Burma Road, but on the China side it would pass through valleys afflicted with malignant malaria, and hence would present unusually difficult health problems. It is stated that 1,150 out of 2,600 men employed in one part of this railway (on the China side) in 1941-42 died in a five-month period.

Glowing reports have been written of mineral and other resources along the Yunnan portion of this line. Probably such a railway would stimulate a fair amount of economic development, thus providing some of the traffic necessary to make it a paying proposition. In peace there is ordinarily a considerable amount of traffic too bulky or cheap to warrant air transport and yet too valuable to justify the much longer journey to the sea from western China and then by boat around Singapore. Doubtless it would attract a certain amount of passenger traffic but in the minds of Burmans, that would be a distinct liability, unless there were a satisfactory immigration law or agreement. With much of the roadbed prepared, and many tunnels at least partially ready, completion of the road in the postwar period would not be an insuperable task; but innumerable unforeseen military and political considerations may play the major role in determining whether or not the road will ever be built.

The completion of the Stilwell Road from Ledo in Assam to Myitkyina, Bhamo, and the Burma Road, raises the question as to whether the Burma Railways may not be extended from Myitkyina to connect, similarly, with the Indian railway network. In view of the colossal expense of building a railway on embankments high enough to withstand Hukawng Valley floods, it is very much to be doubted if such a line will be of sufficient use to justify its cost. The fact that the motor road, built at very great expense, is there to furnish a link between the two railheads, provides another argument for leaving well enough alone.

REHABILITATION

By the time the Japanese left Burma, in mid-1945, Allied bombers had left little of the Burma Railways but the right-of-way and the frequently damaged track. Rolling stock, repair shops, bridges, and stations were of little use. The Siamese government purchased that portion of the Burma-Siam Railway lying within Siamese territory, but it is reported that some rails have been removed on the Burmese side of the border, so no use will be made of this "Railway of Death"⁴ for some years.

By January 1947, of the 2,060 route miles 1,450 were open to traffic. Locomotives (nearly all imported since the Japanese were driven out) numbered 183, or about half the prewar number. Railway shops were very active, although their equipment was apparently not up to prewar standards, and they were faced with the need for more repairs than they could make for many months at least. Many small bridges were under repair. By March it could be predicted that other important lines would be opened for traffic by the fall of 1947.⁵ However, the chief bridges, including those over the Irrawaddy and the Sittang, as well as the famous Gokteik Viaduct, will probably not be open for a considerable time, necessitating tedious delays in transshipment, and substantial additions to the cost of shipping freight. By February 1947, night running of trains was discontinued after a number of hold-ups by well-armed dacoit gangs who killed many passengers, guards, and crew members in addition to wrecking the train and making off with much loot.

It seems reasonable to expect a vigorous Burmese nationalist administration, not only to restore Burma's railways to their fairly satisfactory prewar state, but also to connect to the railway system of at least one of the country's neighbors, though such development cannot now be given top priority among the country's many pressing rehabilitation needs.

⁴ So called because of the use by the Japanese of large numbers of Australian, Dutch, British, and American prisoners, under such brutal, slave-driving methods that most of the prisoners died before the railway was completed.

⁵ *Burma Railways Progress Report*, January 1947, issued by the Director of Public Relations; and *Survey of Departmental Activities* for February 1947.

XIX

AIR TRANSPORT

ECONOMIC SIGNIFICANCE

PREWAR aviation in Burma consisted almost entirely of the operations of four important international lines and occasional visits by military aircraft. An internal line operated for a time without government subsidy and, it is maintained, without competent direction. Its service was discontinued before the outbreak of war. Commercial service started with the Dutch line in 1931, and even when Imperial Airways entered the field two years later and was permitted to carry passengers between Burma and India, Burma never provided a significant number of passengers or quantity of mail. In 1939 Rangoon became the junction point between the three lines to Europe and the China National Aviation Corporation route, and high hopes were entertained for Rangoon's future as an international aviation junction. Whether this will be the case is open to question. Vast quantities of goods were shipped over the Hump from Assam to southwestern China by the Army Transport Command during 1943-45. A more direct route, encountering much less difficult terrain, goes from Calcutta to Myitkyina and thence to Kunning. Unless postwar aviation involves extraordinarily long hops, and normal flights over the dangerous terrain north of Burma, it is still likely that Rangoon, Myitkyina, Lashio, or Mandalay will be used by postwar air lines in this part of the world. Moreover, the failure of the prewar line to make a profit does not at all indicate the impossibility of a postwar line building up a profitable business within Burma with the use of modern equipment.

PREWAR AIRLINES

Imperial Airways.—This line, later incorporated into British Overseas Airway Corporation, extended its operations from Karachi to Rangoon and beyond late in 1933. It used land planes prior to 1938, and then shifted to the use of Short-Sunderland flying boats which landed in Pazundaung Creek, close to the heart of Rangoon. The line continued from Rangoon to Australia via Bangkok and Singapore, with Rangoon ordinarily an overnight stop. There were three services per week in each direction, and from the beginning of 1938 to the outbreak of war in Europe all first-class mail between Burma and the United Kingdom was carried by this company without extra charge to the customer. The Burma Government's share of the contribution necessary to maintain this service was about Rs. 111,000, paid annually to the B.O.A.C. through the Indian Posts and Telegraphs Department. No other air line was permitted to carry mail addressed to or originating in Burma until after the outbreak of war. Imperial Airways also had a monopoly of passenger traffic between Burma and India, except for 1933–34 when Indian National Airways ran a service between Rangoon and Calcutta. The two competing lines could pick up passengers in Burma only to convey them to destinations outside India and Burma.

In 1940 the British Overseas Airway Corporation opened a branch line from Penang to Hong Kong, thus completing the last link in a round-the-world service, since Pan American Airways had already extended its services across the Pacific to Hong Kong.

Dutch Air Mail.—The K.L.M. line inaugurated a Holland-to-Java run in 1931, with Rangoon as an overnight stop. There were two services weekly in each direction. Prior to 1939 this line was prohibited from carrying mail to or from Burma, or from carrying passengers between Burma and India; thus, its importance to Burma was slight. It used Douglas DC-2 and DC-3 planes, and made the journey from Croydon to Rangoon in four days, against five for Air France, and seven for Imperial Airways. This line was very punctual as well, its flights

between Karachi and Europe in 1937 having been on time in 100 out of 104 flights, against 62 out of 105 service flights of Imperial Airways.

Air France.—This line maintained a weekly service from Paris to Saigon (later extended to Hong Kong), from 1931, relying chiefly upon Dornier three-motored planes. Like K.L.M., it had very little Burma business, owing to legal limitations.

China National Aviation Corporation. On October 31, 1939, the first service plane of C.N.A.C. arrived in Rangoon, having left Hong Kong the previous day, and stopped at Kweilin, Kunming, and Lashio en route. At first there was a weekly service, which later was increased to twice weekly, in addition to a weekly flight as far as the Burma railhead at Lashio. Like the K.L.M., it used DC-3 planes, better known as C-47's. The crews were partly Chinese, partly American. For a time after the Japanese occupation of Indo-China and the discontinuance of B.O.A.C. service between Penang and Hong Kong, C.N.A.C. carried mail for Hong Kong and the United States. It was also permitted to carry local passengers between Rangoon and Lashio.

Irrawaddy Flotilla Company. This very important operator of inland watercraft was agent for Imperial Airways, and for a few years had services between Rangoon and Mandalay via the oil fields, and between Rangoon and Moulmein. The line is thought to have been unfortunate in its choice of equipment and operating crews, and traffic at that time was insufficient to support the line on a commercial basis. After the loss of a plane, service was discontinued.

CHIEF PREWAR AIRFIELDS

Mingaladon, 12 miles north of Rangoon, was the principal Burma airfield, and the one from which the Dutch, French, and Chinese lines operated. Up to 1939 it was considered definitely inadequate, and K.L.M. threatened to omit Rangoon from its schedule unless a suitable field was provided. In 1939-40 the field was greatly expanded and improved. It was given three

hard runways, varying from 3,750 to 4,200 feet in length, with additional lights, radio, and repair facilities, the latter in the hangar. The sanctioned cost was Rs. 1,615,000 but it is believed that total expenditures considerably exceeded this figure. The field is located on a laterite ridge, and is hence not liable to flooding or waterlogging even during the midst of the monsoon. It is on the main motor road from Rangoon to Mandalay and Prome, and is also close to the largest military cantonment in Burnia, as well as to the transmitters of Rangoon Radio.

Akyab, on the Arakan coast, was a scheduled stop for B.O.A.C. between Rangoon and Calcutta. It had macadam runways, lighting, and radio, and its runways measured about 2,000 by 3,000 feet.

Lashio was the only other field of any commercial importance, and was, as noted above, a regular stop on the Rangoon-Hong Kong service of C.N.A.C. Its all-weather runway was 4,000 feet long.

Moulmein, Tavoy, and Mergui had small airfields for emergency use by commercial planes, Tavoy and Mergui having also had military airfields just prior to the outbreak of war.

The Japanese constructed many additional airfields and strips, and Burma now has the weed-covered remains of many more airfields than will be needed for commercial purposes in the foreseeable future.

PERSONNEL AND TRAINING

Although the Burman showed considerable affinity for the petrol engine in general and the motor vehicle in particular, Burmans had very little scope for aviation training prior to the war. In 1941 a Civil Aviation Center was started at Mingaladon, equipped with two Tiger-Moth training planes. There were four hundred applicants for the course, and forty trainees were selected.

The subject of training in aviation deserves serious attention and considerable state aid. With numerous foreign lines calling in Burma, there may be quite a few positions in connec-

tion with maintenance of fields and repair and servicing of planes. In addition, Burma's size enables the airplane to cut hours, and even days, off journeys to outlying towns, and an internal airline may eventually prove profitable.¹

REHABILITATION AND FUTURE POSSIBILITIES

The Royal Air Force and the United States Army Transport Command maintained regular services through Rangoon for a number of months after the war, eventually being replaced by British Overseas Airways, with a daily service in each direction. Orient Airways of Calcutta started a daily service from Calcutta to Akyab and Rangoon on July 1, 1947, using DC-3 planes.

Prewar Burma had many officials, landowners, and businessmen who could afford to pay a little more for air transport than they had previously paid for first-class rail or water transport. Burma's prostrate economic condition at the end of the war may prevent a great many from being able to travel by air for a few years, but when the country recovers its prewar prosperity, demand should be greater than ever, for Burmans have become as air-minded as many Western peoples. When a new start is made, with improved equipment and personnel, Burma may well have a fair network of air lines. A nationalist government, desirous of cementing ties with outlying hill areas, is very likely to look to the inauguration of regular air services as one means of accomplishing that end.

Modern four-engined commercial planes can fly from Calcutta to Kunming or to Bangkok nonstop, but flying large quantities of petrol over such great distances does not seem an economic measure. If Burma can provide even a small amount of business, the lines are all the more likely to make Rangoon

¹ In the weekly meeting of the Executive Council of the Government of Burma, held June 19, 1946. "It was agreed that steps be taken to enter into an agreement with the proposed Burma National Airways to operate internal air services in Burma. The proposed B.N.A. will be a public limited liability company registered in Burma." *New Times of Burma*, June 22, 1946. The *New Times* reported on January 15, 1947, that this line had opened service between Rangoon and Calcutta on that date, and expected to extend services to Bangkok, Saigon, and Singapore at a later date.

a port of call, even with the greatly enlarged planes now predicted for the near future. Myitkyina and Mandalay are admirably suited as stopping points on a Calcutta-Kunming run. Should the Burma Road and/or the still incomplete Burma-Kunming railway line bring more trade to Burma, Rangoon may have an even larger and more prosperous Chinese community than before the war. Such a community would be an important user of the airway, as well as of other means of transport between the two countries. For the present, however, Rangoon is the only large airport equipped to receive four-engine commercial planes, and it is doubtful if the Burmese government will feel justified, for some years at any rate, in spending large sums to render other airfields suitable for modern traffic.

The skill displayed by Burmese mechanics may aid the development of repair and other facilities in Burma. But basically, Burma's future as an international air junction will depend largely upon the amount of business originating in that country, which in turn will depend largely upon the rapidity and extent of Burma's economic recovery. The development of internal feeder lines may be an important factor making for an increase in the use of foreign lines as well.

Pan American Airways commenced a round-the-world service in June 1947, but at present its planes hop from Calcutta to Bangkok, without a stop in Burma. They have been licensed by the Civil Aeronautics Board of the United States government to stop at Rangoon, however, and permission to enjoy all five freedoms in Burma has been granted by the appropriate British and Burmese authorities, so it is not unlikely that Rangoon will be included in Pan American's itinerary as soon as traffic demand justifies. Should Pan American's associate, China National Aviation Corporation, restore its service from Chungking to Rangoon, a connecting stop at the latter airport by Pan American would be expected. Trans-World Airlines has not extended its service beyond India, but it has been authorized to continue its line as far as Shanghai, with stop in Burma.

Plans were publicized, in the fall of 1946, to enlarge and modernize Mingaladon (Rangoon) airfield. With international traffic carried on chiefly by four-motored planes, larger and larger in size, it would seem necessary for Rangoon airfield to be enlarged in the near future if Rangoon is to stay on the main line of round-the-world traffic. One cannot but appreciate, however, the dilemma facing the finance department, with such a large number of extremely urgent and desirable projects, all costing great sums of money, all needing to be done before the country's exports have been developed sufficiently to yield a sizable balance with which to pay for the necessary machinery and other imports.

XX

COMMUNICATIONS

PREWAR Burma had fairly complete and modern post and telegraphic facilities, but it was only in the few years before the war that telephones, radio, and wireless began to be developed along up-to-date lines. Since educational levels, and the level of urban commercial activity, largely determine the demand for such facilities, it is not surprising that communications in Burma were much less developed than in any Western country of comparable size.

TELEGRAPHS

Following the outbreak of war, telegraph service for the general public was suspended in February 1942. On November 1, 1946, domestic service was restored. Foreign cable service was available much earlier.

In 1939 there were 656 telegraph offices, connected by 8,373 miles of line, or 33,281 miles of wire. Of the 656 offices, about half, or 331, were railway telegraph offices, the remaining 325 being operated by the Posts and Telegraphs Department, and ordinarily housed in the same buildings as local post offices.

The entire country was covered by the telegraph network, from Kengtung in the Shan States north of Siam, to Maungdaw, the westernmost town of the country, and from Victoria Point at the southern tip of Burma to Fort Hertz in the extreme north. Overland routes led to India via Taungup and Akyab and also via Mandalay and Imphal. Other routes led to China via Bhamo and to Bangkok via Moulmein. The

Arakan coast route through Akyab was frequently interrupted by cyclonic storms which broke the lines. The route through Assam, on the other hand, was often dislocated by wild elephants. Through Siam, Burma was connected by telegraph lines with Malaya and other parts of southeast Asia.

Although there were a total of six land lines on the two routes between Burma and India, a very large part of the traffic in the decade before the second World War was sent by wireless from Mingaladon north of Rangoon to Madras, and thence to its destination in India by land wires. One of the greatest bargains in the world of telegraphy was the possibility of sending a twelve-word telegram (including address) from any point in Burma to Mingaladon by land wire, thence to Madras by wireless, and then by telegraph to any point in India, all for 15 annas (30 cents). Telegraphic money orders were very extensively used by Indian immigrants for the transmission of money to their relatives in India. Service was reasonably prompt throughout the country and in spite of the fact that the messengers who delivered the telegrams were quite poorly paid and not very intelligent, telegrams reached their destination in not much more time than would be required in Western countries.

Offices and lines during the Japanese occupation.—The Japanese immediately attempted to restore telegraphic and other communications and rather promptly set up a "Burma Telegraphic Communications Bureau." Apparently telegraphic communication and postal service were separated. However, the Japanese appear to have kept very tight military control over the telegraphs through the agency of the Japanese Army Signal Corps. An advertisement in the *New Light of Burma* of October 30, 1943, gives the telegraphic address of a broker at Pegu, and there is other evidence that a limited amount of business was accepted from the general public. By the beginning of 1943 telegraphic service is believed to have been opened to most of southeastern Asia. Larger towns appear to have had telegraph service by that time, but it was as late as September 1944 before the Japanese announced the reopening of the

office at Amarapura. It was advertised that the office would accept domestic and foreign messages.

Postwar restoration of telegraphs.—C. M. Scott, chief telecommunications engineer, reported¹ that inland telegraph service was restored on November 1, 1946, for the general public, although in the first instance only express (i.e., extra cost) telegrams were accepted. In the first three months 64,450 telegrams were sent. Service to foreign countries was by then available from 57 offices, and three or four new offices have been opened monthly since that time. The supplementary service of the Burma Railways has similarly been restored. The direction-wireless telegraph circuit between Madras and Rangoon was restored June 24, 1946, and had handled 121,431 express telegrams by January 31, 1947, in spite of inadequate equipment which could not give stable communications. The High Speed Wireless station maintained a 24-hour-day connection with London during a few days at the end of January 1947 while the Burmese delegates were in London negotiating the Anglo-Burmese Agreement, upon which Burma's constitutional change is based. The Rangoon-Colombo High Speed circuit carried 15,867 messages in February 1947.²

TELEPHONES

Lines and exchanges.—By 1937 the rather small and inadequate "government network," confined chiefly to offices in Rangoon and other district headquarters, had a total of 1,273 connections. Although the system was primarily intended for official use, important merchants would often make use of the government telephones for consultations with business connections in Rangoon and elsewhere. The network was placed in operation in September 1936.

The Rangoon Telephone Company, serving Rangoon, Syriam, and Mingaladon's 2,808 prewar subscribers, had paid the Government 5 percent gross in royalty in addition to an

¹ *New Times of Burma*, February 9 and 13, 1947.

² *Survey of Departmental Activities*, January and February 1947.

annual payment of Rs. 4,000 to the Rangoon Corporation for the privilege of using the public standards for its wires. This company's rates were much higher than those in Western countries and service was decidedly poorer than in a corresponding American city. The Chinese authorities planned, before the war, to connect their Yunnan system directly with Rangoon, but this project did not materialize. The radio telephonic service (between Rangoon, Mingaladon, and Madras) carried a total of 2,230 messages in 1938-39.

Japanese period.—The Japanese restored the lines sufficiently to permit leading Japanese firms and government and military officials to communicate between the principal towns of the country. The only important addition to the telephone facilities of the country has been a telephone line alongside the Burma-Siam railway.

Postwar period.—A thoroughly modernized dial telephone system throughout Burma would appear to be indicated as a great necessity in the postwar period. Like other Oriental countries with a polyglot population, Burma is handicapped in the use of an operator system because of the multiplicity of the languages as well as the great variety of accents of operators attempting to speak one of them, such as English. A dial system on the other hand responds with complete impartiality to the finger of a speaker of Burmese, Hindi, Sgaw Karen, Kachin, Gujarati, or Malial.

Scott states that by January 31, 1947, "The Telecoms Department is operating 53 main and 39 branch telephone exchanges. Thirty-seven of the main exchanges are connected to the trunk network. There are 1,450 telephone connections in Rangoon and 700 in other towns in Burma, and these numbers are steadily increasing." Plans are afoot to install an automatic exchange in Rangoon. Telephone and telegraph service is greatly handicapped by thefts of wire, about 960,000 feet having been stolen in the six months ending January 1947. It was expected to open reliable telephonic communications with Calcutta by a land line.³

³ C. M. Scott, in *New Times of Burma*, February 9 and 13, 1947.

RADIO AND WIRELESS

Significance.—Like the telephone system, Burma's radio and wireless development was in its early youth, if not in its infancy, at the time of the evacuation. In 1941 there were 13 radio stations with 23 transmitters, 32 receivers, 6 direction-finders, and 2 broadcast transmitters. Mingaladon with a ten-kilowatt Phillips transmitter, installed after the outbreak of war in Europe, had the only broadcasting station of any importance. It had commenced operations in 1937, the studio being in a portion of the Rangoon Post Office. Since there were relatively few receiving sets in the country, this station was not of great importance, nor was much money spent on programs.

Wireless development, however, was much more considerable as indicated above. Wireless telegraphy took the place of land telegraph and ocean cable lines to a great extent. The use of such facilities was rather general.

Stations and facilities.—The Mingaladon radio transmitted from Mingaladon with a power output first of one and one-half kilowatts and then of ten kilowatts on a wave length of 49.9 meters under the call letters "XYZ" and also on 86 meters with a power of 50 watts for local reception under the call letters "XZZ." Burma's frontiers with China and Siam were dotted with a series of small radio stations about 100 miles apart operating under the control of the Police Department. The small Government wireless stations at Victoria Point and at Rangoon communicated with ships at sea and, in the case of the former, served as a substitute for cable communications. As to personnel, there were 62 wireless operators in the country in 1941, of whom nine were Burmans, most of the remainder being Indians.

In March 1940 there were only 6,321 licensed radio sets in the country, over half of which were in the Rangoon area. In April 1940 the *Rangoon Times* reported that 3,500 license holders were presumed to be interested in English broadcasts against 1,700 interested in Burmese broadcasts. The licensees paid fees of Rs. 70,000 yearly for the privilege of having their sets and listening to the Government programs without adver-

tisements. The newspapers claimed that only Rs. 60,000 was spent on broadcasting but it is doubtful if this figure included any of the engineering costs and other expenses essential for the maintenance of physical equipment at Mingaladon.

The Mingaladon station gave programs lasting a total of 39 hours and 20 minutes per week, 20 hours of which were devoted to Burmese programs, 17 hours to English, and 2 hours 20 minutes to Indian programs.

Japanese developments.—The Japanese appear to have expanded radio facilities to some extent, and of course Rangoon radio was used as a base for attacking India with psychological-warfare broadcasts. No less than thirteen different languages were used on this station.

There are reports of the setting up in 1943 of another ten-kilowatt Rangoon transmitter. There was also talk of making radio sets available to people all over Burma, but nothing came of this happy suggestion. The Japanese called in receiving sets soon after they occupied the country and adjusted them so as to prevent the Burmans from listening to Allied broadcasts. This was done rather thoroughly, so that Dacca was ordinarily the only foreign station to which Burmans could listen.

Rehabilitation.—In February 1947, it was reported that "The Broadcast Transmitting Station has been kept on the air although spare parts have not arrived yet. The loss of broadcasting time due to breakdowns has been very small and can compare favorably with any other broadcasting service. A second 7 kilowatt transmitter has been repaired sufficiently for it to serve as a standby and a 6 kilowatt medium wave transmitter to serve the Rangoon area will soon be in service."⁴

The Public Relations Department, which operates Rangoon Radio, distributed 23 "community receivers" in January 1947, and a month later reported that a total of 545 receivers had arrived, although most of them were not in use. Large groups of villagers listen to most of the receivers already distributed.⁵

⁴ Scott, *loc. cit.* Another official source gives the strength of the medium-wave station as five kilowatts.

⁵ *Survey of Departmental Activities*, January and February 1947.

Future.—The war has undoubtedly broadened the horizons of great numbers of Burmans and made them much more interested in news from Rangoon and elsewhere than they ever were before. It is therefore highly probable that many families in Burmese towns and villages will purchase sets as soon as they are available in order to keep up with the outside world. In fact it might seem justifiable that the government should subsidize the provision of radio receivers in the villages throughout the country as a means of getting government announcements quickly to the populations of remote rural areas.

Posts

The Posts and Telegraphs Department operated the Mingaladon radio station as well as the government telegraph system. All parts of the country except certain sparsely populated hill tracts were covered by 372 post offices, each one of which did every kind of business, including telegraphic money orders and registry. Considering the semiliterate condition of the average postman, items reached addressees with surprising certainty. There were mail carriages on Burma Railway trains, and the Irrawaddy Flotilla Company carried mail by contract. Numerous contracts were also made with small motorbus companies for carriage of mail on highways inaccessible to rail or river transport, while postmen went on foot to innumerable villages in out-of-the-way corners of the country, although in such cases visits were often made on a weekly basis, and delivery on any particular day of the week could not be relied upon.

A very popular feature of the early years of the Postal Department was the setting up of mail or "dak" bungalows at strategic intervals in the Shan Hills and other areas where hotels or other suitable accommodations for Europeans were nonexistent. The public could make use of these bungalows, on payment of a modest fee, if they were not in use by a touring official.

The parcel-post system had the usual international connections. Service was reasonably efficient—except, of course, to

remote villages. Rates were about the same as in Western countries.

As indicated in the previous chapter, Imperial Airways (later merged with B.O.A.C.) carried first-class mail between Burma and the United Kingdom without extra postage from the beginning of 1938 to the outbreak of war in Europe. Carriage of air mail was permitted only to this company, which received a subsidy of Rs. 114,000 from the Government of Burma for its services. Prior to 1938, Imperial Airways also had a monopoly of air-mail carriage, but customers were required to pay considerably more postage than for mail going by surface.

The Japanese period.—By December 1943 the Japanese appear to have reopened 258 of the country's post offices, but the gradual paralysis of internal transport prevented letters reaching their destinations with regularity. The domestic parcel-post rate under the Japanese appears to have been ten cents (the rupee was divided into cents by the Japanese) per tola, or somewhat more than in the British period. Japanese, Burmese, and English were the only permissible languages for those using either posts or telegraphs.

Reconstruction.—By May 1947, the Government of Burma had reopened 328 post offices. Several more post offices have been opened monthly since the end of the war. C.O.D. service on outward foreign parcels was re-introduced on January 2, 1947, and on the same date British Postal Orders were made available at a number of post offices. A weekly Rangoon-Myitkyina airmail service was introduced in March 1947.⁹ Mr. Hughes reported in September 1946 that "the rehabilitation of the Postal Department has made considerable strides and is well ahead of the schedule planned in Simla."

⁹ *Survey of Departmental Activities*, March 1947.

XXI

LABOR

SUMMARY

THERE was very little class consciousness in prewar Burma on the part of the Burman, and labor or trade unions were few and not very important. Labor legislation ordinarily copied or adapted those British laws considered most suitable for Burma. Most of the labor was connected with agriculture and was carried on according to the customs of the local village. Thus the employer-employee relationship in agriculture seldom presented difficult problems.

British firms provided a large part of industrial employment and they have profited by experience in Western countries. Thus, they have provided working conditions, housing, and pay which ordinarily raise their employees above the admittedly low standards of living prevailing in rural areas. Working hours in such establishments were ordinarily eight or nine per day. The agriculturists also labored somewhat less hours per day than their fellows in Western countries within the temperate zone. The maximum hours per week permitted for factory workers were 54; and rice mills and sawmills generally worked this maximum. Cotton-ginning—a seasonal industry—was permitted a 60-hour week, but holidays in all factories were fairly numerous, particularly around full-moon time, and there were seldom over 20 working days a month.

An agricultural worker received 100 to 140 baskets of paddy plus his board for the seven months of the working season. Burmans in the oil fields, on the other hand, received Rs. 30–45 a month, or about twice the real income of the agri-

women take part in agricultural operations; the men uprooting the nursery stock and carrying it to the women who do the actual transplanting. After transplanting there is a respite of a month or two in which the Burmese agriculturist works only moderately hard, but the previous months of heavy and continuous labor in a debilitating climate require a certain amount of relaxation. At the same time, the Burman's physique is slight and not very athletic, although Karens, Kachins, and other hill tribes are sometimes heavy-set and robust. One seldom sees a fat Burman except among the more prosperous and sedentary. Harvesting is another strenuous operation and here again the women are called on to help, but they certainly do not help in order to permit their menfolk to remain idle.

TABLE 34
DISTRIBUTION BY ECONOMIC FUNCTION OF 1,000 MALE
EARNERS OF SELECTED RACES
(*Burma as a whole*)

	Burmans	Chinese	Indians*
Cultivating landowners	260	159	27
Cultivating tenants	181	8	40
Agricultural laborers	307	20	101
Herdsmen, fishers, and hunters ...	19	17	31
Clerical workers	9	24	39
Industrial management	1	3	1
Craftsmen	54	144	97
Unskilled laborers	83	189	432
Professional, etc.	6	7	8
Traders, etc.	49	412	167
Rentiers	13	8	5
Army, police, etc.	5	1	29
Other public service	3	4	..
Medicine	6	4	4
Miscellaneous	4	..	19
Total	1,000	1,000	1,000

* Indians born outside Burma. Indians born in Burma were much more frequently engaged in agriculture.

When the paddy has been threshed and delivered to the buyer the bright moonlit nights are enlivened with allnight *pwes* or *ponggyi-byans* (cremations of monks) paid for by employers or other prosperous individuals. The farmers thus are ordinarily able to do the repairing of *kazins* or embankments at this time or else rebuild or repair their houses or prepare simple

farms for the ensuing season's work. One wishes that casual Western observers who accuse the Burmese male of being indolent were forced to exert themselves for even a brief period in the Burmese climate as does the ordinary Burmese agriculturist.

Much of the work briefly described above is done by the small proprietor, or more likely, by the tenant. However, some laborers are employed for the cultivating season as a whole while others are employed at the height of the transplanting or reaping season, being paid at daily rates with or without food, or at piece-work rates. In any case Burmese agricultural labor is fairly well specialized, and the laborer does certain specific tasks after which he is discharged. The more skilled type of seasonal laborer is called *gaung saung* or *U-Zi* (headman), whereas the ordinary worker is called *nauk laik* (follower). Mr. B. O. Binns has kindly supplied the following examples of wages for three Lower Burma and one Central Burma district (see Table 35). Paddy has been commuted to money at the rate of Rs. 100 for 100 baskets and food has been allowed for.

TABLE 35
SEASONAL WAGES IN SELECTED BURMA DISTRICTS
(Before World War II)

	Maximum per day Rs.	Maximum per month Rs.
<i>Bassein</i>		
Whole season	154	104
Plowing season	92	52
Reaping season	51	31
<i>Amherst (Moulmein)</i>		
Whole season	114	92
Plowing season	62	52
Reaping season	41	31
<i>Hanthawaddy (Rangoon)</i>		
Plowing season (headman)	92	57
Reaping season (headman)	66	36
Totals (headman)	158	93
Plowing season (follower)	77	42
Reaping season (follower)	61	31
Total (follower)	138	73
<i>Pyanmuna</i>		
Whole season	144	104
Plowing season	62	52
Reaping season	51	41

The foregoing table should be read with the understanding that the scale of living is rather low in a Burmese village, where housing costs little more than the use of a dah (large Burmese knife) for a few days, and other amenities of life are to be had very cheaply. As against the average monthly wage of Rs. 10 indicated by the foregoing table, it should be noted that a junior clerk in Rangoon drew Rs. 40 a month.

The manner in which the world-wide depression of the 1930's affected the agricultural laborer in Burma is well described by U Tin Gyi in his *Settlement Report on Hanthawaddy District* (1931-33).

The most noteworthy feature of the agricultural system in the Settlement Area is that no laborer performs all the operations himself. Ploughing, plucking seedlings, transplanting, reaping and threshing are all separate divisions of function for which the cultivator tries to obtain the cheapest labor available in the village. Thus we have a class of laborer whose sole income is derived from work performed either by himself or the members of his family. The father may be engaged for three or four months as a ploughman, to be followed later by work in plucking seedlings from a nursery, while the mothers and daughters would earn something by taking part in the transplanting operations. The younger sons if still unable to do hard work will enter the service of some cultivator as herdsman. During the harvest season, all are employed in reaping the fields unless the men find employment as harvest hands (elsewhere). The able and healthy laborer will usually earn during the year 75 to 85 baskets of paddy while the women members of the household will perhaps earn another 50 to 60 baskets. The present rate of wages paid for in paddy for the different operations are much the same as the corresponding wages at the time of the last Settlement but with paddy prices ranging from Rs.150/- to Rs.200/- per 100 baskets, the laborer class had no difficulty in making ends meet. Now that the monetary value of paddy has depreciated by more than 50 percent, this class of people has suffered most and are at present living from hand to mouth. Cash wages have also been reduced by 25 to 30 percent since the depression.

Making all possible allowance for the cheapness of living in the tropical Burmese climate, it is still evident that Burmese agricultural labor is employed only part of the year and that at

very low wages. Moreover the drift of land into the hands of moneylenders and large-scale landowners has been operating for over a generation to turn peasant proprietors and tenant farmers into landless laborers. Such a class forms an excellent basis for the activities of the demagogue as well as the small-scale criminal. It was noted in the foregoing that during the five months when agricultural labor is at its lowest ebb, many laborers found work in rice mills, on the roads, etc. It will also be noted from the foregoing statistics that only a very small proportion of the country's agricultural laborers could possibly find employment in the rice mills or other industrial establishments. It is therefore highly probable that the solution of Burma's problem of the agricultural laborer will be found largely in a greater degree of industrialization particularly as it provides alternatives in cottage industries, small workshops, etc., for employment during the off season.

Many careless statements have been published to the effect that Indians constitute the larger portion of Lower Burma's labor supply. It will be seen from Table 36 that the ratio between Indians and Burmans in agricultural labor of the country as a whole in the year 1931 was 51 to 675. In other words, Burmans outnumbered Indians as agricultural laborers by a thirteen-to-one margin. Since Indian agricultural laborers were concentrated in Lower Burma, it is to be assumed that the proportion in that half of the country was about six or seven to one, with very few Indian agricultural laborers in Upper Burma. Indians were preferred as laborers on some Indian properties such as the sugar estate at Zeyawaddy, and some villages were primarily Indian.

One slight drawback of census statistics in obtaining the comparison between Burmese and Indian agricultural laborers should be noted. The census in 1931 was taken in February, after the harvest season and when rice milling was at its peak. Probably the proportion of Indian agricultural laborers who had temporarily gone to the towns and had taken employment in rice mills was higher than the similar proportion for Burmese laborers.

Perhaps balancing this consideration that the 1931 Census may have understated the share of Indians in agricultural work is the fact that the total Indian population in Burma almost certainly declined after 1931, whereas Burmese population increased by about 15 percent. Hence, were figures for the 1941 Census available, it is almost certain that they would have shown that the Indian is taking a considerably smaller part in Burmese agriculture than was indicated by the 1931 Census.

The proportionate share of Burmans, Chinese and Indians born outside Burma in Burma's chief occupations is set forth in Table 36, also compiled from the latest complete census—that of 1931.

TABLE 36
DISTRIBUTION BY RACE OF 1,000 MALE EARNERS IN EACH
FUNCTIONAL CLASS*

	Burmans	Chinese	Indians
Cultivating landowners	446	11	11
Cultivating tenants	682	1	34
Agricultural laborers	675	2	51
Herdsmen	252	33	440
Fishers and hunters	625	9	47
Clerical workers	391	40	379
Industrial management	513	60	179
Craftsmen	569	59	232
Unskilled laborers	382	34	454
Professional	501	22	152
Traders, etc.	403	133	310
Army, police, etc.	296	3	411
Other public service	457	23	10

* It should be noted that this table differs from Table 34 in that the latter shows distribution of members of selected races among various occupations, whereas this table shows the absolute proportion of selected races in any given occupation.

Burmans, because of their greater numbers, stood first in all the foregoing categories except as herdsmen, unskilled laborers, and army and police, in which occupations Indians born outside Burma predominated. If Indians born in Burma are added to Indians born outside Burma, that race also outnumbered Burmans in clerical functions. (Columns for Indians born in Burma, Karens, Europeans, and others are omitted from Table 36. Hence totals for the three races shown fall short of 1,000). On the other hand, the inclusion of women would bring up the Burmese share, since there were very few Indian or Chinese women in the foregoing occupations.

The following tabulation tells the same story, except that it gives the total number of Burmans and of Indians in the main branches of economic activity, according to the 1931 Census :

BURMANS AND INDIANS IN SELECTED OCCUPATIONS

Occupation	Number of Burmans	Number of Indians
Agriculture, etc.	2,450,918	178,208
Industry	376,668	104,767
Transport	89,865	101,530
Trade	330,019	96,211
Domestic service	17,611	24,326

Particularly noteworthy is the small proportion of Indians engaged in agriculture. Even when it is admitted that a few thousand Indians engaged in agriculture during the harvest had shifted to rice milling by February 24—the date of the census, it is still evident that most of Burma's rice was produced by Burmans without foreign help.

INDUSTRIAL LABOR

Indians predominated as factory workers in the early British days in Burma. This was only natural since they could be had rather cheaply, since the European managers were better acquainted with Indians than with Burmans, and since *some* of the Indians had had experience in factories in India. In recent years, however, Burmans have considerably increased their share in the labor forces of their country's factories. Moreover, many Burmans go back and forth from agriculture to rice milling as do the Indians, while other Burmans shift from cultivation to weaving and other handicrafts.

As mentioned frequently in the foregoing, many Burmans have displayed considerable aptitude as mechanics, electricians, and craftsmen generally where there is required a considerable degree of intelligence and deftness of hand. There is no reason, therefore, why the ability which enables the Burman to make a successful mechanic or electrician should not enable him to take his full share in any probable future industrialization of

his country. The Burmah Oil Company at Syriam, Steel Brothers' Cotton Mill at Myingyan, and the Violin Hosiery Works at Singu are the three outstanding factories which made extensive use of Burmese labor. The Syriam refinery employed large numbers of Burmese women in the candle factory and as they operated on the piece-work system they packed candles with the greatest of speed and accuracy. Burmese women (in a few cases Burmese men) do nearly all the work of knitting, cutting, sewing, and packing underwear at Singu. The Adamjee Hajee Dawood Match Factory in Pazundaung also employed large numbers of Burmese men and women, the latter doing the lighter tasks while the men had jobs which called for greater strength or mechanical skill.

Perhaps the most authoritative recent study of labor in Burma was the *Report on Indian Immigration* by Mr. James Baxter published in Rangoon in 1940. In comparing Burmese with Indian labor Mr. Baxter wrote:

The opinions of employers of labor, whether European, Burmese or Indian, is unanimous that Burmese laborers are not as efficient as Indian in dull, monotonous work involving heavy manual labor, such as cutting earth or carrying heavy loads, but it is equally unanimous that "when the work is intricate the Burmans understand it better than the Indians" and that the "Burman is more anxious to occupy the skilled artisan positions than to take up the unskilled work." It is found generally that Burmans can compete successfully with any Indian labor in work of a skilled or semi-skilled nature.¹

A rather interesting "division of labor" between Burmans and Indians is described by Mr. Baxter as follows:

. Burmese labor is giving satisfactory results over a wide range of relatively unskilled occupations and it is of a good average character in all: it does not compare favorably, however, with the particularly efficient gangs of Coringhi and Tamil laborers in the heaviest manual tasks. It is also worthy of record that where Burmans and Indians are working together, the Burmans assume that heavier work should be carried out by the Indians, yet "on the other hand, where the Burmans work alone, we find that they

¹ Baxter, *Report on Indian Immigration*, p. 85.

will do just as heavy and dirty work as Indians, if somewhat more slowly."²

The Chief Railway Commissioner gives these additional data to support the thesis that Burmans have been replacing Indians in various aspects of their country's economic activities: The average Burman prefers employment which does not render it necessary for him to leave his family or his native village; in fact, if possible, he likes his family to work with him. He dislikes the possibility of being transferred from one part of the country to another, a practice which is unavoidable in the case of many Railway posts. An example of this is earth work executed by Burmese contractors. The work is actually done by family groups, the women and children assisting the men. Another example of this tendency is shown in the fact that Burmans are replacing Indians, chiefly in Upper Burma where the number of Burmese permanent way gang maistries and coolies is increasing very rapidly, and in every case the gang consists wholly of Burmese, the gang-huts becoming nuclei of small Burmese villages and everyone concerned appears to be perfectly happy. Any attempt to transfer one or more of a gang however usually leads to the men leaving the employment.

Mr. Baxter points out that Indians are sometimes preferred to Burmans by employers who dislike the long vacations demanded by the Burmans as well as the fact that the latter are less submissive to exactions and petty injustices from maistries. The evidence submitted to Mr. Baxter was not unanimous, however, for the four leading European timber firms testified thus:

The standard of living of the Burman is higher, and there can be little doubt that the substitution of Burmans for Indians in the case of coolie work would result in a substantial increase in working costs and would involve a complete revolution in sawmilling organization. Equally, any increase in costs would seriously upset the whole economy of the sawmilling industry.

Against this pessimistic view Mr. Baxter quotes the Burmah Oil Company as follows:

Given the necessary training and experience Burmans should . . . in time replace Indians in all categories of our labor force.⁴

² Baxter, *Report on Indian Immigration*, p. 87.

³ *Ibid.*, p. 86.

⁴ *Ibid.*, p. 88.

Comparing available statistics of 1938-39 with those of 1933-34, Mr. Baxter found evidence that Burmans occupied 27.2 percent of the country's industrial (including mining) labor in the earlier period against 30.7 percent in the later period, the Indians' share declining proportionately. Among skilled workers in the later period Burmans numbered 36.7 percent as against 58.4 percent for Indians (and a smaller percentage for Chinese). Among unskilled workers Burmans constituted 29.7 percent of the labor forces and Indians 69.5 percent.

One place in which Indians have fairly well held their own in spite of some Burman competition has been on the docks of Rangoon. In chapter viii of his *Report on Indian Immigration* Mr. Baxter says that Indians are preferred to Burmans since the former will work at least as hard or harder, will live near their work in hovels provided by their maistries, and are available in large numbers quickly, whereas Burmans insist on living at a distance with their families and this increases living costs. Moreover, Burmans must be hired singly or in small groups. Burmese dock workers are former agricultural laborers in most cases, and if urban earnings fall too low in proportion to urban living costs, Burmans fade away from the market, whereas Indians cannot so easily withhold their labor when wages or employment fall.

After the 1930 race riots an arrangement was worked out whereby the Indians and Burmans were given a fifty-fifty tonnage share. But this means that Burmans got the rice, where the cost per ton was less, and Indians handled teak, salt, coal, and ores—more difficult cargoes.

Indians worked in gangs, the individual members of which changed constantly, although the gang itself continued, maybe along caste or village lines. Hence Burmans were quite unable to break into such gangs, and outside compulsion was apparently necessary to bring about Burmanization.

Accurate statistics are unavailable, but qualified observers agree that few stevedores and foreshore laborers got more than twelve or thirteen days of work per mensem because of the

excess of labor in Rangoon. Concerning the future, a leading Rangoon employer stated:

A demand for increased wages from a completely Burmanised labor force protected by immigration restriction, would simply lead to mechanisation. The day of the Indian coolie gang is nearly done. They never were efficient and as wages rise it becomes more profitable to introduce mechanical means of handling.

ORGANIZED LABOR

Organized labor was in its infancy in Burma at the time of the Japanese invasion. In the first place there were less than 100,000 factory employees in the country, and a very large proportion were hired by rice mills, cotton gins, etc., operating on a seasonal basis, and employing local agricultural laborers. Such laborers did not present a very fertile field for organizers. Moreover, various groups of Indians would not readily unite for trade-union action because of racial, religious, linguistic, or other barriers, while in only a few cases were there large groups of Burmans working steadily together on a year-around basis.

In 1939-40 Indian shipping laborers, ricksha pullers, and bus drivers did organize unions, however. The 1935 Constitution allotted two of the 132 seats in the House of Representatives to Indian labor and one to non-Indian labor, but there was little or no evidence that the elected representatives were controlled by bona fide unions or by rank and file laborers to as great an extent as would be expected in a Western country.

STRIKES

In view of the extremely undeveloped state of organized labor in prewar Burma, it is not surprising that there were very few strikes. A few strikes did occur, however, after 1935, wages being the chief cause of dispute. A strike, such as that in the Violin Hosiery Works, near Insein, is a jolly and sociable affair, particularly if Burmese women are the chief participants. However, in view of the quickness of the Burmese temper, strikers must be handled with considerable circumspection, lest

riots and bloodshed ensue. Just before the outbreak of war in the Pacific, strikes were increasing in frequency to such an extent as to occasion the presentation to the legislature of an "Industrial Disputes Settlement Bill" which was not acted upon prior to the Japanese invasion.

Strikes sometimes tended to take on a racial flavor, as when the Burmese employees of the Violin Hosiery Works or Burmah Oil Company struck against Indian or British employers. In other cases, such as the 1930 dispute over the right of Burmans to engage in stevedore work, a strike is essentially a dispute between two racial groups over employment.

CHINESE AS LABORERS

The Chinese were much less numerous than the Indians, and a very large proportion of them were self-employed in commercial undertakings, small hotels, cafes, etc., or else worked in such small establishments for other Chinese. The one occupation in which Chinese constituted a substantial proportion of the labor force, and worked for members of another race, was mining. Even in the case of the Chinese employed by the Consolidated Tin Company at Hermingyi, Tavoy District, many worked on a piece-work system, with a minimum of supervision.

The census figures reproduced in the middle column of Table 36, page 269, show the Chinese share in various occupations. It should be remembered, however, that most of the Chinese thus listed worked for themselves, or for relatives or friends, so that no "labor problem" arose. It will be seen that it was only in trade, where they numbered 13 percent of the total, that they were numerically important. In industrial management and as craftsmen they constituted 6 percent of the labor force—and in Rangoon City they would probably be a very much larger proportion, for they were outstanding as carpenters.

From the foregoing figures it is obvious that the Chinese were, by and large, an insignificant part of the Burmese labor picture. In view of the absence of legal restrictions on Chinese

immigration, and of the existence of a long border with China, as well as considerable trade by sea with Malaya and China proper, there is no basis in past experience for the fear that Burma's racial complexion will be changed by Chinese immigration. Neither the Burma Road nor the projected Burma-Yunnan Railway seems likely to change this situation, for there are undeveloped and underpopulated areas along the routes of both which would be much more likely to attract Chinese bent on removal from the interior of China. The prospective post-war industrialization of China, including southwestern China, should still further restrict emigration to Burma.

LABOR LEGISLATION

The chief items of legislation in Burma were the Payment of Wages Act and the Factories Act of 1934. The latter applied chiefly to women and children, but also had rather modern provisions for sanitation, keeping of registers, and safety conditions. The 1940 *Annual Report on the Working of the Factories Act* shows that in that year there were 108 convictions for violations of the two acts, 88 of them being against owners of rice mills. Forty-seven of the convictions related to health and safety, against 25 for notices and returns, 22 for employment registers and notices, 12 for violation of rules relating to hours of work and employment, and two for violations of special provisions for employment of women.

The 1940 *Factories Act Report* stated that:

The employment of young persons and children in factories is not extensive and is confined mostly to light sawdust removing in sawmills or "kappas" sorting in cotton ginneries. Such children as are so employed are usually brought by their parents or other relatives who work in the same mill. Occasional cases occur where the prescribed certificates of fitness have not been obtained but no serious abuses have come to light over a long period.

Up to 1941 there was still no compulsory type of social insurance or old age pension scheme for non Government employees.

Housing conditions for industrial labor in Rangoon were bad according to almost every observer. For instance, Mr.

James Baxter, chairman of the Committee on Indian Immigration, wrote on August 30, 1941:

I have been shocked and saddened to see under what grievous disabilities a large part of the laboring population of Rangoon works and lives. Housing conditions are often very squalid in the extreme; wages are low, and in many cases settlement is made only at long and irregular intervals.

Steel Brothers, the Burmah Oil Company, and other large European firms provided barracks for their employees which were in many respects superior to the accommodations which laborers of similar grade could secure anywhere else in the country. Similarly, the Rangoon Development Trust engaged in various schemes involving slum clearance and the provision of low-cost housing. However, the housing problem always seemed to grow beyond the capacity of the R.D.T. to catch up with it. Some of the Indian labor contractors, or "maistries," found an additional means of exploiting their unfortunate charges, by hiring rooms and crowding workers together into almost unspeakable quarters.

LABOR UNDER THE JAPANESE

One immediate effect of the Japanese occupation was to throw open to Burmans a wide variety of jobs previously held by Europeans, Indians, and Chinese. Practically all senior civil service jobs held by Europeans, for instance, were filled by Burmans. Indian labor was still present, but only about half as much as before, and in some areas outside Rangoon, Moulmein, etc., Indians found it expedient to remove themselves from threats of violence. Thus competition from foreign labor was drastically reduced.

The demand for certain types of labor was similarly lessened, of course, with reduced activity on the railways, and with numerous factories unable to operate because of demolition, bombing, shortage of machinery repairs, fuel, raw materials, and other items. Although attempts were made to stimulate production of paper and numerous other commodities hitherto imported, total employment on such projects was low.

The virtual cessation of rice export also meant the disappearance of the need for most landless laborers in Lower Burma. The small-scale farmers and tenants were in a position to till sufficient land to produce more rice than could be used locally or exported with available shipping.

However, there was an almost insatiable demand on the part of the Japanese army for labor to build the railway to Siam, and to assist in building airfields, military roads, and other engineering projects. An attempt was made to give a patriotic flavor to recruitment, by dubbing the organization of Burmans recruited for this purpose the "Kywe Tat" or "Sweat Army," and emphasis was later placed on the slightly more militarized "Heiho Tat."⁵ Headmen were forced by the Japanese authorities and by local Burmese administrators to furnish "recruits" for the labor service. These recruits were paid but one rupee, or at most two rupees per day, even though inflation drove up the market price of wages to five or ten rupees. It was common for men drafted for the Heiho Tat to pay others to take their places. Moreover, after recruitment took place, it was often difficult to deliver the full quota at headquarters, for some slipped away en route.

Burma's unfortunate position in the forefront of military activity caused the Japanese to apply more pressure there than elsewhere for forced labor for military projects, and an English message from the Dencei agency, on March 19, 1944, stated that Burma had supplied more labor service than any other area of the southern regions, and in July of the same year an Embassy official in Rangoon stated that about 800,000 persons were helping the Japanese army through "voluntary service."

THE REHABILITATION PERIOD

The war has undoubtedly stimulated Burmese political development by at least a decade. Certainly it stimulated the vigorous growth of unions in the Rangoon region until about 20,000 of an estimated 50,000 laborers joined unions of

⁵ "Heiho" is a Japanese word, meaning "soldier's auxiliary." "Tat" is a Burmese word for "army."

one sort or another. The Communists were particularly active in this field, and continued to be active after their expulsion from the Anti-Fascist Peoples Freedom League, the dominant political group. However, the Trade Union Congress is affiliated with the Anti-Fascist League, which appears to spare no efforts to win the support of the labor movement, and seems to have a larger measure of support than both of the Communist parties, combined.

Mr. A. C. Baker, British labor specialist, arrived in Burma in February 1946, to assist the trade-union movement and organize a labor department. He has set up conciliation boards and committees of inquiry to assist in the settlement of individual strikes. The strongest individual union is that of the railway workers, but even it does not include a majority of eligible workers in numerous areas outside Rangoon.⁶

Wages have risen to about Rs. 70-80 per mensem for unskilled labor, against Rs. 20-25 before the war, just about keeping pace with official index figures for the cost of living.

The rehabilitation saw a great number of strikes, culminating in a police strike of September 1946, which approximately coincided with strikes by a great many other unions including railway, communications, and sawmill workers. The high cost of living, and inability of workers to maintain a customary prewar standard of living on their wages, appears to have been the chief cause of the strikes. The September strikes had both political and economic significance, and appear to have been a chief factor in enabling General Aung San and his colleagues in the AFPFL to assume leading positions in the Governor's council. Pyapon, district headquarters in the Delta southwest of Rangoon, also had a police strike which permitted a condition bordering on anarchy, for:

The crime situation in Pyapon District is rapidly deteriorating, says an official report. Since the Pyapon police went on strike the general populace of Pyapon in mobs of 1,000 or more people at a time have indulged in wholesale looting of rice mills and warehouses

⁶ This information was kindly supplied by Dr. Virginia Thompson Adloff, who visited Rangoon in April 1947.

not only in Pyapon town and the neighborhood but all over the district.⁷

The demands of the Joint Committee of Service Organizations for extra cost of living allowances were for great additional pay for low-paid workers, and no extra pay at all for workers drawing over Rs. 600 per mensem. Those drawing Rs. 30 and under were to receive a cost of living allowance of Rs. 60, while those drawing Rs. 100 were to receive an allowance of Rs. 100.⁸ The extremely difficult circumstances of laborers was generally recognized, but the Government was faced with an enormous deficit, and was loathe to add to that deficit, and to the inflationary situation, by major wage increases at a time when consumer goods were woefully inadequate.⁹

Concessions were eventually made, and the Supplement to the *Burma Gazette* of September 14, 1946, contained the report of the Board of Conciliation, appointed under the Trade Disputes Act to consider the plight of public workers and recommend measures "to counter the present high cost of living." The *New Times of Burma* on October 4, 1946, carried news of the settlement, which included substantial pay increases (though not as substantial as those demanded by the strikers).

Indian immigration must be considered in any discussion of labor in Burma. The Government of India has reviewed the position with regard to the movement of unskilled labor to Burma. By a notification in July 1941 under the Indian Immigration Act, emigration of such labor to Burma was prohibited. Subsequently, however, evacuee unskilled laborers were exempted from the operation of the ban.

Owing to the unsatisfactory labor conditions in Burma and the lack of sufficient employment even for those Indian laborers

⁷ *New Times of Burma*, September 18, 1946.

⁸ *The Burman*, September 18, published a letter to the Governor, from Mr. E. Barnard, president of the Committee, which claimed to represent twelve different unions, including organizations among railway workers, communications workers, and employees of the Post Office.

⁹ The official *New Times of Burma* published an editorial on September 19, 1946, recommending to the railway workers the arguments along the above described line by the Chief Railway Commissioner.

who are already in Burma, the Government of India has now decided to withdraw its general exemption in favor of evacuee unskilled laborers.¹⁰

THE FUTURE

Many commentators on Burmese economy have expressed the opinion that the Burman is not a satisfactory laborer, and hence the country must have a larger and larger body of cheap, docile Indian (or Chinese) labor. The present Indian government, headed by Pandit Nehru, seems unlikely to sympathize with this view, or to permit India to compete with neighboring countries by providing labor more easily exploited than indigenous labor. In any case, this view is incorrect and unfair to the Burman, for, as shown in the earlier portion of this chapter, many employers of labor were willing to admit that Burmans could work with considerable skill. They were less easily exploited than Indian immigrants, and would less willingly submit to poor working and living conditions. Their postwar organization into unions will doubtless reinforce their opposition to conditions which they dislike. Industrialization will probably enhance their competitive position considerably, for Burmans have proved quite able to hold their own in skilled and semi-skilled occupations.

Since Burmese population increased 14 percent between 1931 and 1941, and has probably increased considerably since 1941, there is no likelihood of an over-all shortage of labor in that country, unless industrialization proceeds at an unforeseen pace. In fact, it is precisely in handling and repairing machinery that the Burman has shown the greatest skill. Thus, the substitution of machinery for degrading and backbreaking work, such as carrying 200-pound bags of rice from boat to shore on the back of a 135-pound man, should be possible without large-scale importation of foreign labor.

That the restrictive policy of the Government of India prevented Indians from entering Burma in large numbers is attested by the fact that only 55,092 persons arrived in Burma

¹⁰ Government of India Information Service, quoted in the *Rangoon Mirror*, May 5, 1947.

from India during the first four months of 1947, against emigration to India of 44,876 - a net increase by immigration of only 10,216 for the four months.¹¹ This situation nevertheless appears to have failed to satisfy Burmese opinion, and the *Burma Gazette Extraordinary*, of June 14, 1947, published the Burma Immigration Act, 1947, setting up a system of passports and visas to control immigration. The Act provides for rules to be issued separately, but does not contain provisions for exclusion of specific classes of immigrants. The *New Times of Burma* published a report on June 19 that the Government of India had formally protested against the law as discriminatory against Indians. The Burmese reply is that whatever rules are enforced will be administered without any discrimination against Indians, Chinese, or other nationalities.

¹¹ No reliable estimates are available for movements across the land frontier between Arakan and Bengal. It is believed that several thousand Indians have entered Arakan since the end of the war, with no offsetting efflux. Statistics cited in this paragraph relate to the port of Rangoon only, and are taken from the monthly *Survey of Parliamentary Activities*.

XXII

PUBLIC HEALTH AND VITAL STATISTICS

BURMANS are, as a race, clean as to their persons and fairly clean as to their immediate surroundings. However, lack of understanding of the cause of most diseases makes them tolerate extremely unsanitary conditions in their villages, and take almost no precautions against contamination of food or water or against infection from flies, mosquitos, and other insects. Although Burma's health record is not particularly bad compared to surrounding nations, it is deplorable from the standpoint of western European countries or from the standpoint of Americans.

BIRTH RATES

Official statistics relate to "Burma Proper" or the 38 districts of "divisional Burma," and exclude the Shan States, the Chin Hills, and much of northern Burma. However, over 85 percent of the population is included in the area covered by the statistics although that area is but 171,157 square miles out of a total area of 261,610. The birth rate in 1939¹ in these 38 districts was 35.3 per thousand, as reported to Public Health Department officials by village headmen. This figure is almost certainly an underestimate, as are figures for deaths. Headmen are unlikely to go to the trouble of making entries for births or deaths which do not occur, thus inflating the figures for birth

¹ Disturbed conditions have prevented the compilation of reliable vital statistics since 1939. See *Health Problems of Burma*, an interesting paper presented to the Asian Relations Conference at Delhi by Dr. Maung Sein, March 1947.

and death rates. On the other hand, there is ample evidence to show that they frequently do not take the trouble to record births and deaths which do occur, thus making official returns for birth and death rates unduly low. Moreover, it may be more than a coincidence that Myingyan District, with the lowest standard of literacy, according to the 1931 Census, also has the lowest birth and death rates. Its birth rate in 1939 was officially placed at 25.3, against a death rate of 20.5. Rangoon, and districts in the more literate Irrawaddy Delta, recorded considerably higher rates.²

Another reason for suspecting a considerable underestimate of the birth rate is the fact that the difference between it and the recorded death rate was about 10 per thousand, which indicates a 1 percent annual increase in population. But the actual increase in population between 1931 and 1941 was 14 percent, in spite of the fact that fairly complete statistics show immigration and emigration to be almost exactly equal. In other words, the rather reliable Census data show that the average difference between birth rate and death rate was 14 instead of 10 per thousand. It is perhaps natural that headmen should save themselves the trouble of recording some births, particularly when the babies have died by the time the headman gets around to make the record. Since deaths more often concern older people, well known to the headman, there is not quite the same tendency to inertia in submitting the required record.

Birth control is probably practiced to some extent by the small sophisticated urban population, but it is not known if it is of any importance in rural areas. Assuming, however, that the true birth rate is 5 or 10 per thousand higher than the recorded rate, it appears that the birth rate is little affected by contraception.

DEATH RATES

The official death rate in 1939 was given as 25.1 per thousand. As indicated above, this is believed to be an underestimate,

²The Dry Zone, including Myingyan District, is generally regarded as somewhat healthier than the Delta, so part of the apparent difference in death rates is probably genuine.

though not by as large a margin as the probable error in the recorded birth rate. The Public Health Department, with technical assistance from the Rockefeller Foundation, established a Health Unit at Hlegu, between Rangoon and Pegu, about 1930. One of the functions of this Unit was to keep a more accurate check on vital statistics. An immediate result was a very substantial *apparent* increase in both the birth rate and the death rate!

MALARIA

With the exception of Rangoon and a few other fortunate spots, malaria is a scourge which affects the entire country, and is undoubtedly the most important cause of illness and death.

A very large proportion of deaths reported by village headmen are ascribed merely to "fever" without elucidation. Observers agree that malaria is much the most important type of fever in most areas. For several years before the war there was a special officer of the Public Health Department detailed to study the mosquito and malaria problem of Burma, and direct the campaign for its solution. The Department's anti-malarial operations, however, were concentrated in the two highly malarious areas of Akyab and Kyaukpyu, on the Arakan coast, and Maymyo,³ and Lashio, in the Shan States. Minor operations against malaria were carried out at Sandoway on the Arakan coast, at Bhamo and Myitkyina in northern Burma, at Promie, Shwedaung, Henzada, and Syriam in Lower Burma, and at Salin in the Dry Zone.⁴ Thus, the Department had commenced work in almost all important sections of the country.

OTHER DISEASES

The other chief recorded causes of death in Burma were cholera, smallpox, plague, dysentery, and the family of respiratory diseases, including tuberculosis. The visitor must wonder why anyone survives in the Burmese village at all, in view of

³ Perhaps "highly malarious" overstates the case for Maymyo, Burma's pleasant summer capital, but it accurately describes much of the Shan States, including Lashio.

⁴ *Annual Report of the Department of Public Health* (Burma, 1939).

the fact that night soil is merely deposited on the ground for the benefit of flies, which breed unchecked, and which have little difficulty in lighting upon the food of most villagers. Moreover, water-borne diseases are encouraged by the practice, in many villages, of merely digging holes in the ground for "wells," and drinking unboiled water from such wells. This practice, coupled with the lack of sewage facilities mentioned above, gives maximum scope to a number of diseases.

Intestinal diseases are worst during the rains, and it is then that the transfer of germs from sewage and night soil to food is most prevalent. The 1939 public health records showed 1,572 deaths as due to diarrhea, but in view of the lack of medical knowledge on the part of all residents of most Burmese villages, such statistics are not of great value. The hospitals in 1939 admitted 91,328 cases of diarrhea and dysentery, and of course their record of 647 deaths must be accepted as accurate. Their records show June and July, the first two full months of monsoon, as having the highest incidence for intestinal diseases. The hospitals in 1939 reported 24,115 cases and 189 deaths from amoebic dysentery. For bacillary dysentery they reported 13,146 cases and 182 deaths. However, since most Burmans live and die without benefit of modern medical care, it would seem a fairly safe guess that cases of bacillary dysentery number more than 100,000 annually, the great majority of cases never having been brought to the attention of the hospitals.

The peak for cholera cases is reached late in the dry season and during the early rains—up to July. The year 1939 was unusual, however, the largest number of deaths being recorded in December. Cholera victims appear to visit the hospitals in exceptional instances only, there being but 330 cases and 74 deaths in hospitals in 1939, whereas the Public Health Department recorded no less than 1,351 deaths from cholera in the Pegu and Irrawaddy divisions alone. The Public Health Department, without very adequate staff or equipment, did its best to safeguard water supplies, and in 1939 it gave a total of 230,608 inoculations, of which 70 percent were in rural areas. It also distributed pamphlets and had its small staff give

lectures, wherever possible, to educate the public as to appropriate anti-cholera measures.

Smallpox is the disease against which the Public Health Department carried out its most successful campaign. Over 10 percent of the population in the areas covered—1,525,238 in all—were vaccinated in 1939. Recorded deaths in that year fell to the lowest figure since records were first kept, in 1872. The figure was 125, and since smallpox is more easily identified than some of the other diseases, that figure may be quite close to the true one.

Respiratory diseases probably have less scope in Burma than in similar areas in India and China because of the type of housing. Most Burmans live in bamboo and thatch houses from which it is impossible to exclude ventilation!

Intestinal parasites are extremely common throughout rural areas, where sanitation is almost completely absent and most of the population is shoeless. Probably hookworm infection is most common, followed by ascaris, beef tapeworm, and pig tapeworm, the latter being rather rare. Hospitals in 1939 treated 277,559 persons for ascaris (roundworm)⁵ against 1,623 for hookworm, and 1,100 for tapeworm. It is almost certain, however, that these represented an extremely small portion of those actually infected.

Yaws, beriberi, trachoma, skin infections of various kinds, and leprosy are among the other more important diseases. A survey of limited areas in Kengtung State indicated an incidence of approximately 1 percent for leprosy. A series of about ten American Baptist Mission leprosy colonies, in Kengtung, had approximately one thousand inmates, while the Italian Roman Catholic Mission had a somewhat smaller number in its colonies. Once more, it should be noted that most of those infected with this disease did not secure medical care of a modern sort or come within reach of those who gathered reasonably accurate statistics.

⁵ The reason for assuming that hookworm is more common than ascaris in spite of these hospital statistics is that the villager is almost certain to notice roundworms, whereas the hookworm is so small as to be identified with difficulty by a villager. Several years before the war approximately 80 percent of the inmates of Rangoon jail were found to have hookworm.

SANITATION

Throughout most of Burma sanitary measures were conspicuously absent. Flush toilets were found only in Rangoon and a few wealthy homes elsewhere, but the bucket-latrine system was rather common. In villages not even this rather inadequate sanitary measure was taken. The Hlegu Health Unit has had some success in popularizing the "bored hole latrine" whereby a large auger, procurable from the Unit, is used to dig a hole about 18 inches in diameter and 20 feet deep. The hole is fitted with a bamboo mat lining, and covered with a concrete "squatting plate." A few thousand of these latrines were placed in operation prior to the Japanese occupation but, unfortunately, their use had not become general. It was necessary first to persuade the Burman that there was a close connection between the disposal of night soil and the incidence of disease in his village.

Cattle dung accumulates in all villages as good breeding places for flies, and household refuse is usually dumped very close to the house. Wells are often without masonry to keep out surface water and the rains wash much filth into many wells which are the source of the village supply of drinking water.

Probably mosquito nets represented the most widely used sanitary or public health measure, but even they were not used by the majority of the people, and those who used them probably did so more to avoid the discomfort of being bitten rather than from an appreciation of the connection between mosquitos and malaria. Even the British residents ordinarily did not have wire screens capable of keeping out mosquitos. In place of the germ theory of disease, most Burmans believed all sorts of superstitions. Urban Burmans, of course, were coming to appreciate the value of sanitation and to adopt modern means of prevention and cure of disease, although much educational work still remains to be done, even in urban areas.

HOSPITALS AND PUBLIC HEALTH DEPARTMENT

There were 315 government hospitals in 1939, with 9,364 beds for free patients, besides a few private wards. They

treated 3,983,747 patients in that year and rendered much the greatest part of the competent, modern medical service given in the entire country. They were under the direction of the Inspector General of Civil Hospitals, the local hospital ordinarily being in charge of a Civil Surgeon, if in a District Headquarters, or of an Assistant or Sub-Assistant Civil Surgeon, if in smaller towns. The staff was recruited on a civil service basis, and was ordinarily quite competent. One Hindu and several Christian mission societies had hospitals, but such private hospitals were much less important, in the aggregate, than the government hospitals. The Moslim League maintained a popular dispensary in Barr Street, Rangoon.

The Director of Public Health had two assistant directors, and the following staff:

RURAL STAFF	URBAN STAFF
5 district health officers	8 second-class health officers
5 assistant district health officers	21 medical registrars
36 subassistant surgeons	136 public health inspectors
79 inspectors	93 vaccinators
20 inspectors of vaccination	
317 vaccinators	

It will be noted that the proportion of urban to rural staff was rather high, considering the predominantly rural nature of the population. In addition to the full-time public health staff listed above, a number of medical officers attached to civil hospitals were required to co-operate in urgent public health work when full-time public health workers were not available.

As indicated above, prevention of smallpox is the Department's most complete success. When smallpox or any other preventable epidemic breaks out, the department mobilizes its staff of vaccinators in the areas surrounding the affected village or quarter and vaccinates almost the entire population, thus localizing the worst incidence of the disease.⁶ The Department had its own facilities at Meiktila for the manufacture of lymph

⁶ The postwar Public Health Department is not as well staffed or equipped as its predecessors, but is improving constantly in both respects and is sending "epidemic mobile teams" to danger points. See *Summary of Departmental Activities*, January 1947.

and vaccines. The staff, both British and Burmese, had a very high *esprit de corps*, and engaged in propaganda work with great enthusiasm, using lantern slides, movies, loudspeakers, posters, pamphlets, lectures, and health exhibitions. It encouraged the digging of bored hole latrines before the war and in the few years before the outbreak of war in the Pacific it distributed millions of quinine pills, manufactured from imported material at the Rangoon Central Jail.

Perhaps the one time in the life cycle of the Burman when he is most ready to recognize the need of modern medical care is at the birth of his child. There were large numbers of midwives, under general supervision of government medical officers, practicing in the rural areas. In the Dry Zone, for instance, they were paid on the "results" system. They got Rs. 40 per mensem if they delivered the minimum number of babies, and were fined or given an extra Rs. 2 per baby according as the actual number was less or more than the basic minimum. Such women seldom had a knowledge of English and had seldom gone beyond the seventh standard (eighth grade). They had a few months to a year of specialized training before entering actively upon their profession. Even at that, they were a vast improvement over the ordinary indigenous midwife, and undoubtedly they saved many lives.

A highly successful aspect of the public health program was a school in Kemmendine (Rangoon) for "Lady Health Visitors." About twelve young women per year took the course of training and were sent out as friendly public health workers and propagandists among the women and children of the country. Their work has been very warmly praised by public health experts.

MEDICAL PERSONNEL

Most of the well-trained doctors and nurses of Burma were employed in government hospitals or by the Public Health Department. The elite were those with medical degrees from foreign medical institutions or from the Medical College of the University of Rangoon. The rank and file consisted of

cultural laborer. The farm worker "went back to his village" for the remaining five months or took employment in rice mills or other seasonal factories. Women received about three-fourths the wages of men. Indians and Burmans often specialized on different tasks even though working in the same establishments; consequently it is difficult to compare wages on a racial basis. Where such comparisons were possible Indian wages were slightly lower than Burmese wages. The Government ordinarily paid 12 annas for an eight-hour day of work on the roads or in the forests. The "maistry" system was endemic in Burma and aroused attempts for its abolition. The maistry or foreman was a labor contractor who undertook the supply of laborers and received a lump sum including the pay of all workers whom he supplied. He thus received a commission on their earnings and was able to deduct large amounts of interest at exorbitant rates for loans advanced to his workers. The leading industrial establishments dealt directly with their employees wherever possible, but some large firms and sometimes smaller firms appear to have been unable to free themselves from the influence of the maistry system.

Table 3-4, compiled from the 1931 *Census Report*, underlines the well-known fact that Burmans were principally engaged in agriculture, whereas Chinese and Indians born outside Burma specialized in trade and unskilled labor, respectively:

The Burmese cultivator is frequently accused of being lazy, and of permitting his womenfolk to do most of the country's work. Serious observers like Furnivall point out that the Burman is no less ambitious than most inhabitants of the tropics. He is rooted to the soil and takes agriculture seriously even though he has a generally happy-go-lucky outlook on life, combined with a considerable degree of vitality. Rice cultivation was described in some detail in chapter iv (pages 58-59). It should be noted that during the plowing and harvesting season the farmer works long hours knee-deep in mud. He also has to repair embankments by hand and by the time preparation of the soil is completed the stock in the nurseries is about ready for transplanting. Only then do large numbers of Burmese

women take part in agricultural operations; the men uprooting the nursery stock and carrying it to the women who do the actual transplanting. After transplanting there is a respite of a month or two in which the Burmese agriculturist works only moderately hard, but the previous months of heavy and continuous labor in a debilitating climate require a certain amount of relaxation. At the same time, the Burman's physique is slight and not very athletic, although Karens, Kachins, and other hill tribes are sometimes heavy-set and robust. One seldom sees a fat Burman except among the more prosperous and sedentary. Harvesting is another strenuous operation and here again the women are called on to help, but they certainly do not help in order to permit their menfolk to remain idle.

TABLE 34
DISTRIBUTION BY ECONOMIC FUNCTION OF 1,000 MALE
EARNERS OF SELECTED RACES
(Burma as a whole)

	Burmans	Chinese	Indians*
Cultivating landowners	260	159	27
Cultivating tenants	181	8	40
Agricultural laborers	307	20	101
Herdsmen, fishers, and hunters ...	19	17	31
Clerical workers	9	24	39
Industrial management	1	3	1
Craftsmen	54	144	97
Unskilled laborers	83	189	432
Professional, etc.	6	7	8
Traders, etc.	49	412	167
Rentiers	13	8	5
Army, police, etc.	5	1	29
Other public service	3	4	..
Medicine	6	4	4
Miscellaneous	4	..	19
Total	1,000	1,000	1,000

* Indians born outside Burma. Indians born in Burma were much more frequently engaged in agriculture.

When the paddy has been threshed and delivered to the buyer the bright moonlit nights are enlivened with allnight *pwees* or *pong-yi-byans* (cremations of monks) paid for by employers or other prosperous individuals. The farmers thus are ordinarily able to do the repairing of *kazins* or embankments at this time or else rebuild or repair their houses or prepare simple

farms for the ensuing season's work. One wishes that casual Western observers who accuse the Burmese male of being indolent were forced to exert themselves for even a brief period in the Burmese climate as does the ordinary Burmese agriculturist.

Much of the work briefly described above is done by the small proprietor, or more likely, by the tenant. However, some laborers are employed for the cultivating season as a whole while others are employed at the height of the transplanting or reaping season, being paid at daily rates with or without food, or at piece-work rates. In any case Burmese agricultural labor is fairly well specialized, and the laborer does certain specific tasks after which he is discharged. The more skilled type of seasonal laborer is called *ganyu saung* or *U Zi* (headman), whereas the ordinary worker is called *nauk nak* (follower). Mr. B. O. Binns has kindly supplied the following examples of wages for three Lower Burma and one Central Burma district (see Table 35). Paddy has been converted to money at the rate of Rs. 100 for 100 baskets and food has been allowed for.

TABLE 35
SEASONAL WAGES IN SELECTED BURMA DISTRICTS
(Before World War II)

	Mon. P.	Rs.
<i>Bassein</i>		
Whole season	154	104
Plowing season	62	52
Reaping season	51	31
<i>Amherst (Moulmein)</i>		
Whole season	114	92
Plowing season	62	52
Reaping season	41	31
<i>Hanthawaddy (Rangoon)</i>		
Plowing season (headman)	92	17
Reaping season (headman)	66	36
Totals (headman)	158	93
Plowing season (follower)	77	42
Reaping season (follower)	61	31
Total (follower)	138	73
<i>Pyinmana</i>		
Whole season	144	104
Plowing season	62	52
Reaping season	51	41

The foregoing table should be read with the understanding that the scale of living is rather low in a Burmese village, where housing costs little more than the use of a dah (large Burmese knife) for a few days, and other amenities of life are to be had very cheaply. As against the average monthly wage of Rs. 10 indicated by the foregoing table, it should be noted that a junior clerk in Rangoon drew Rs. 40 a month.

The manner in which the world-wide depression of the 1930's affected the agricultural laborer in Burma is well described by U Tin Gyi in his *Settlement Report on Hanthawaddy District* (1931-33).

The most noteworthy feature of the agricultural system in the Settlement Area is that no laborer performs all the operations himself. Ploughing, plucking seedlings, transplanting, reaping and threshing are all separate divisions of function for which the cultivator tries to obtain the cheapest labor available in the village. Thus we have a class of laborer whose sole income is derived from work performed either by himself or the members of his family. The father may be engaged for three or four months as a ploughman, to be followed later by work in plucking seedlings from a nursery, while the mothers and daughters would earn something by taking part in the transplanting operations. The younger sons if still unable to do hard work will enter the service of some cultivator as herdsmen. During the harvest season, all are employed in reaping the fields unless the men find employment as harvest hands (elsewhere). The able and healthy laborer will usually earn during the year 75 to 85 baskets of paddy . . . while the women members of the household will perhaps earn another 50 to 60 baskets. The present rate of wages paid for in paddy for the different operations are much the same as the corresponding wages at the time of the last Settlement but with paddy prices ranging from Rs.150/- to Rs.200/- per 100 baskets, the laborer class had no difficulty in making ends meet. Now that the monetary value of paddy has depreciated by more than 50 percent, this class of people has suffered most and are at present living from hand to mouth. Cash wages have also been reduced by 25 to 30 percent since the depression.

Making all possible allowance for the cheapness of living in the tropical Burmese climate, it is still evident that Burmese agricultural labor is employed only part of the year and that at

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Making all possible allowance for the cheapness of living in the tropical Burmese climate, it is still evident that Burmese agricultural labor is employed only part of the year and that at

very low wages. Moreover the drift of land into the hands of moneylenders and large-scale landowners has been operating for over a generation to turn peasant proprietors and tenant farmers into landless laborers. Such a class forms an excellent basis for the activities of the demagogue as well as the small-scale criminal. It was noted in the foregoing that during the five months when agricultural labor is at its lowest ebb, many laborers found work in rice mills, on the roads, etc. It will also be noted from the foregoing statistics that only a very small proportion of the country's agricultural laborers could possibly find employment in the rice mills or other industrial establishments. It is therefore highly probable that the solution of Burma's problem of the agricultural laborer will be found largely in a greater degree of industrialization particularly as it provides alternatives in cottage industries, small workshops, etc., for employment during the off season.

Many careless statements have been published to the effect that Indians constitute the larger portion of Lower Burma's labor supply. It will be seen from Table 36 that the ratio between Indians and Burmans in agricultural labor of the country as a whole in the year 1931 was 51 to 675. In other words, Burmans outnumbered Indians as agricultural laborers by a thirteen-to-one margin. Since Indian agricultural laborers were concentrated in Lower Burma, it is to be assumed that the proportion in that half of the country was about six or seven to one, with very few Indian agricultural laborers in Upper Burma. Indians were preferred as laborers on some Indian properties such as the sugar estate at Zeyawaddy, and some villages were primarily Indian.

One slight drawback of census statistics in obtaining the comparison between Burmese and Indian agricultural laborers should be noted. The census in 1931 was taken in February, after the harvest season and when rice milling was at its peak. Probably the proportion of Indian agricultural laborers who had temporarily gone to the towns and had taken employment in rice mills was higher than the similar proportion for Burmese laborers.

Perhaps balancing this consideration that the 1931 Census may have understated the share of Indians in agricultural work is the fact that the total Indian population in Burma almost certainly declined after 1931, whereas Burmese population increased by about 15 percent. Hence, were figures for the 1941 Census available, it is almost certain that they would have shown that the Indian is taking a considerably smaller part in Burmese agriculture than was indicated by the 1931 Census.

The proportionate share of Burmans, Chinese and Indians born outside Burma in Burma's chief occupations is set forth in Table 36, also compiled from the latest complete census—that of 1931.

TABLE 36
DISTRIBUTION BY RACE OF 1,000 MALE EARNERS IN EACH
FUNCTIONAL CLASS*

	Burmans	Chinese	Indians
Cultivating landowners	446	11	11
Cultivating tenants	682	1	34
Agricultural laborers	675	2	51
Herdsmen	252	33	440
Fishers and hunters	625	9	47
Clerical workers	391	40	379
Industrial management	513	60	179
Craftsmen	569	59	232
Unskilled laborers	382	34	454
Professional	501	22	152
Traders, etc.	403	133	310
Army, police, etc.	296	3	411
Other public service	457	23	10

* It should be noted that this table differs from Table 34 in that the latter shows distribution of members of selected races among various occupations, whereas this table shows the absolute proportion of selected races in any given occupation.

Burmans, because of their greater numbers, stood first in all the foregoing categories except as herdsmen, unskilled laborers, and army and police, in which occupations Indians born outside Burma predominated. If Indians born in Burma are added to Indians born outside Burma, that race also outnumbered Burmans in clerical functions. (Columns for Indians born in Burma, Karens, Europeans, and others are omitted from Table 36. Hence totals for the three races shown fall short of 1,000). On the other hand, the inclusion of women would bring up the Burmese share, since there were very few Indian or Chinese women in the foregoing occupations.

The following tabulation tells the same story, except that it gives the total number of Burmans and of Indians in the main branches of economic activity, according to the 1931 census:

BURMANS AND INDIANS IN SELECTED OCCUPATIONS

Occupation	Number of Burmans	Number of Indians
Agriculture, etc.	2,450,918	178,208
Industry	376,668	104,767
Transport	89,865	101,530
Trade	330,019	96,211
Domestic service	17,611	24,326

Particularly noteworthy is the small proportion of Indians engaged in agriculture. Even when it is admitted that a few thousand Indians engaged in agriculture during the harvest had shifted to rice milling by February 24—the date of the census, it is still evident that most of Burma's rice was produced by Burmans without foreign help.

INDUSTRIAL LABOR

Indians predominated as factory workers in the early British days in Burma. This was only natural since they could be had rather cheaply, since the European managers were better acquainted with Indians than with Burmans, and since *some* of the Indians had had experience in factories in India. In recent years, however, Burmans have considerably increased their share in the labor forces of their country's factories. Moreover, many Burmans go back and forth from agriculture to rice milling as do the Indians, while other Burmans shift from cultivation to weaving and other handicrafts.

As mentioned frequently in the foregoing, many Burmans have displayed considerable aptitude as mechanics, electricians, and craftsmen generally where there is required a considerable degree of intelligence and deftness of hand. There is no reason, therefore, why the ability which enables the Burman to make a successful mechanic or electrician should not enable him to take his full share in any probable future industrialization of

his country. The Burmah Oil Company at Syriam, Steel Brothers' Cotton Mill at Myingyan, and the Violin Hosiery Works at Singu are the three outstanding factories which made extensive use of Burmese labor. The Syriam refinery employed large numbers of Burmese women in the candle factory and as they operated on the piece-work system they packed candles with the greatest of speed and accuracy. Burmese women (in a few cases Burmese men) do nearly all the work of knitting, cutting, sewing, and packing underwear at Singu. The Adamjee Hajee Dawood Match Factory in Pazundaung also employed large numbers of Burmese men and women, the latter doing the lighter tasks while the men had jobs which called for greater strength or mechanical skill.

Perhaps the most authoritative recent study of labor in Burma was the *Report on Indian Immigration* by Mr. James Baxter published in Rangoon in 1940. In comparing Burmese with Indian labor Mr. Baxter wrote:

The opinions of employers of labor, whether European, Burmese or Indian, is unanimous that Burmese laborers are not as efficient as Indian in dull, monotonous work involving heavy manual labor, such as cutting earth or carrying heavy loads, but it is equally unanimous that "when the work is intricate the Burmans understand it better than the Indians" and that the "Burman is more anxious to occupy the skilled artisan positions than to take up the unskilled work." It is found generally that Burmans can compete successfully with any Indian labor in work of a skilled or semi-skilled nature.¹

A rather interesting "division of labor" between Burmans and Indians is described by Mr. Baxter as follows:

. Burmese labor is giving satisfactory results over a wide range of relatively unskilled occupations and . . . it is of a good average character in all: it does not compare favorably, however, with the particularly efficient gangs of Coringhi and Tamil laborers in the heaviest manual tasks. It is also worthy of record that where Burmans and Indians are working together, the Burmans assume that heavier work should be carried out by the Indians, yet "on the other hand, where the Burmans work alone, we find that they

¹ Baxter, *Report on Indian Immigration*, p. 85.

will do just as heavy and dirty work as Indians, if somewhat more slowly."²

The Chief Railway Commissioner gives these additional data to support the thesis that Burmans have been replacing Indians in various aspects of their country's economic activities: The average Burman prefers employment which does not render it necessary for him to leave his family or his native village; in fact, if possible, he likes his family to work with him. He dislikes the possibility of being transferred from one part of the country to another, a practice which is unavoidable in the case of many Railway posts. An example of this is earth work executed by Burmese contractors. The work is actually done by family groups, the women and children assisting the men. Another example of this tendency is shown in the fact that Burmans are replacing Indians, chiefly in Upper Burma where the number of Burmese permanent way gang maistries and coolies is increasing very rapidly, and in every case the gang consists wholly of Burmese, the gang-huts becoming nuclei of small Burmese villages and everyone concerned appears to be perfectly happy. Any attempt to transfer one or more of a gang however usually leads to the men leaving the employment.³

Mr. Baxter points out that Indians are sometimes preferred to Burmans by employers who dislike the long vacations demanded by the Burmans as well as the fact that the latter are less submissive to exactions and petty injustices from maistries. The evidence submitted to Mr. Baxter was not unanimous, however, for the four leading European timber firms testified thus:

The standard of living of the Burman is higher, and there can be little doubt that the substitution of Burmans for Indians in the case of coolie work would result in a substantial increase in working costs and would involve a complete revolution in sawmilling organization. Equally, any increase in cost would seriously upset the whole economy of the sawmilling industry.

Against this pessimistic view Mr. Baxter quotes the Burmah Oil Company as follows:

Given the necessary training and experience Burmans should . . . in time replace Indians in all categories of our labor force.⁴

² Baxter, *Report on Indian Immigration*, p. 87.

³ *Ibid.*, p. 86.

⁴ *Ibid.*, p. 88.

Comparing available statistics of 1938-39 with those of 1933-34, Mr. Baxter found evidence that Burmans occupied 27.2 percent of the country's industrial (including mining) labor in the earlier period against 30.7 percent in the later period, the Indians' share declining proportionately. Among skilled workers in the later period Burmans numbered 36.7 percent as against 58.4 percent for Indians (and a smaller percentage for Chinese). Among unskilled workers Burmans constituted 29.7 percent of the labor forces and Indians 69.5 percent.

One place in which Indians have fairly well held their own in spite of some Burman competition has been on the docks of Rangoon. In chapter viii of his *Report on Indian Immigration* Mr. Baxter says that Indians are preferred to Burmans since the former will work at least as hard or harder, will live near their work in hovels provided by their maistries, and are available in large numbers quickly, whereas Burmans insist on living at a distance with their families and this increases living costs. Moreover, Burmans must be hired singly or in small groups. Burmese dock workers are former agricultural laborers in most cases, and if urban earnings fall too low in proportion to urban living costs, Burmans fade away from the market, whereas Indians cannot so easily withhold their labor when wages or employment fall.

After the 1930 race riots an arrangement was worked out whereby the Indians and Burmans were given a fifty-fifty tonnage share. But this means that Burmans got the rice, where the cost per ton was less, and Indians handled teak, salt, coal, and ores—more difficult cargoes.

Indians worked in gangs, the individual members of which changed constantly, although the gang itself continued, maybe along caste or village lines. Hence Burmans were quite unable to break into such gangs, and outside compulsion was apparently necessary to bring about Burmanization.

Accurate statistics are unavailable, but qualified observers agree that few stevedores and foreshore laborers got more than twelve or thirteen days of work per mensem because of the

excess of labor in Rangoon. Concerning the future, a leading Rangoon employer stated:

A demand for increased wages from a completely Burmanised labor force protected by immigration restriction, would simply lead to mechanisation. The day of the Indian coolie gang is nearly done. They never were efficient and as wages rise it becomes more profitable to introduce mechanical means of handling.

ORGANIZED LABOR

Organized labor was in its infancy in Burma at the time of the Japanese invasion. In the first place there were less than 100,000 factory employees in the country, and a very large proportion were hired by rice mills, cotton gins, etc., operating on a seasonal basis, and employing local agricultural laborers. Such laborers did not present a very fertile field for organizers. Moreover, various groups of Indians would not readily unite for trade-union action because of racial, religious, linguistic, or other barriers, while in only a few cases were there large groups of Burmans working steadily together on a year-around basis.

In 1939-40 Indian shipping laborers, ricksha pullers, and bus drivers did organize unions, however. The 1935 Constitution allotted two of the 132 seats in the House of Representatives to Indian labor and one to non-Indian labor, but there was little or no evidence that the elected representatives were controlled by bona fide unions or by rank and file laborers to as great an extent as would be expected in a Western country.

STRIKES

In view of the extremely undeveloped state of organized labor in prewar Burma, it is not surprising that there were very few strikes. A few strikes did occur, however, after 1935, wages being the chief cause of dispute. A strike, such as that in the Violin Hosiery Works, near Insein, is a jolly and sociable affair, particularly if Burmese women are the chief participants. However, in view of the quickness of the Burmese temper, strikers must be handled with considerable circumspection, lest

riots and bloodshed ensue. Just before the outbreak of war in the Pacific, strikes were increasing in frequency to such an extent as to occasion the presentation to the legislature of an "Industrial Disputes Settlement Bill" which was not acted upon prior to the Japanese invasion.

Strikes sometimes tended to take on a racial flavor, as when the Burmese employees of the Violin Hosiery Works or Burmah Oil Company struck against Indian or British employers. In other cases, such as the 1930 dispute over the right of Burmans to engage in stevedore work, a strike is essentially a dispute between two racial groups over employment.

CHINESE AS LABORERS

The Chinese were much less numerous than the Indians, and a very large proportion of them were self-employed in commercial undertakings, small hotels, cafes, etc., or else worked in such small establishments for other Chinese. The one occupation in which Chinese constituted a substantial proportion of the labor force, and worked for members of another race, was mining. Even in the case of the Chinese employed by the Consolidated Tin Company at Hermingyi, Tavoy District, many worked on a piece-work system, with a minimum of supervision.

The census figures reproduced in the middle column of Table 36, page 269, show the Chinese share in various occupations. It should be remembered, however, that most of the Chinese thus listed worked for themselves, or for relatives or friends, so that no "labor problem" arose. It will be seen that it was only in trade, where they numbered 13 percent of the total, that they were numerically important. In industrial management and as craftsmen they constituted 6 percent of the labor force—and in Rangoon City they would probably be a very much larger proportion, for they were outstanding as carpenters.

From the foregoing figures it is obvious that the Chinese were, by and large, an insignificant part of the Burmese labor picture. In view of the absence of legal restrictions on Chinese

immigration, and of the existence of a long border with China, as well as considerable trade by sea with Malaya and China proper, there is no basis in past experience for the fear that Burma's racial complexion will be changed by Chinese immigration. Neither the Burma Road nor the projected Burma-Yunnan Railway seems likely to change this situation, for there are undeveloped and underpopulated areas along the routes of both which would be much more likely to attract Chinese bent on removal from the interior of China. The prospective post-war industrialization of China, including southwestern China, should still further restrict emigration to Burma.

LABOR LEGISLATION

The chief items of legislation in Burma were the Payment of Wages Act and the Factories Act of 1934. The latter applied chiefly to women and children, but also had rather modern provisions for sanitation, keeping of registers, and safety conditions. The 1940 *Annual Report on the Working of the Factories Act* shows that in that year there were 108 convictions for violations of the two acts, 88 of them being against owners of rice mills. Forty-seven of the convictions related to health and safety, against 25 for notices and returns, 22 for employment registers and notices, 12 for violation of rules relating to hours of work and employment, and two for violations of special provisions for employment of women.

The 1940 *Factories Act Report* stated that:

The employment of young persons and children in factories is not extensive and is confined mostly to light sawdust removing in sawmills or "kappas" sorting in cotton ginneries. Such children as are so employed are usually brought by their parents or other relatives who work in the same mill. Occasional cases occur where the prescribed certificates of fitness have not been obtained but no serious abuses have come to light over a long period.

Up to 1941 there was still no compulsory type of social insurance or old age pension scheme for non Government employees.

Housing conditions for industrial labor in Rangoon were bad according to almost every observer. For instance, Mr.

James Baxter, chairman of the Committee on Indian Immigration, wrote on August 30, 1941 :

I have been shocked and saddened to see under what grievous disabilities a large part of the laboring population of Rangoon works and lives. Housing conditions are often very squalid in the extreme; wages are low, and in many cases settlement is made only at long and irregular intervals.

Steel Brothers, the Burmah Oil Company, and other large European firms provided barracks for their employees which were in many respects superior to the accommodations which laborers of similar grade could secure anywhere else in the country. Similarly, the Rangoon Development Trust engaged in various schemes involving slum clearance and the provision of low-cost housing. However, the housing problem always seemed to grow beyond the capacity of the R.D.T. to catch up with it. Some of the Indian labor contractors, or "maistries," found an additional means of exploiting their unfortunate charges, by hiring rooms and crowding workers together into almost unspeakable quarters.

LABOR UNDER THE JAPANESE

One immediate effect of the Japanese occupation was to throw open to Burmans a wide variety of jobs previously held by Europeans, Indians, and Chinese. Practically all senior civil service jobs held by Europeans, for instance, were filled by Burmans. Indian labor was still present, but only about half as much as before, and in some areas outside Rangoon, Moulmein, etc., Indians found it expedient to remove themselves from threats of violence. Thus competition from foreign labor was drastically reduced.

The demand for certain types of labor was similarly lessened, of course, with reduced activity on the railways, and with numerous factories unable to operate because of demolition, bombing, shortage of machinery repairs, fuel, raw materials, and other items. Although attempts were made to stimulate production of paper and numerous other commodities hitherto imported, total employment on such projects was low.

The virtual cessation of rice export also meant the disappearance of the need for most landless laborers in Lower Burma. The small-scale farmers and tenants were in a position to till sufficient land to produce more rice than could be used locally or exported with available shipping.

However, there was an almost insatiable demand on the part of the Japanese army for labor to build the railway to Siam, and to assist in building airfields, military roads, and other engineering projects. An attempt was made to give a patriotic flavor to recruitment, by dubbing the organization of Burmans recruited for this purpose the "Kywe Tat" or "Sweat Army," and emphasis was later placed on the slightly more militarized "Heiho Tat."⁵ Headmen were forced by the Japanese authorities and by local Burmese administrators to furnish "recruits" for the labor service. These recruits were paid but one rupee, or at most two rupees per day, even though inflation drove up the market price of wages to five or ten rupees. It was common for men drafted for the Heiho Tat to pay others to take their places. Moreover, after recruitment took place, it was often difficult to deliver the full quota at headquarters, for some slipped away en route.

Burma's unfortunate position in the forefront of military activity caused the Japanese to apply more pressure there than elsewhere for forced labor for military projects, and an English message from the Domei agency, on March 19, 1944, stated that Burma had supplied more labor service than any other area of the southern regions, and in July of the same year an Embassy official in Rangoon stated that about 800,000 persons were helping the Japanese army through "voluntary service."

THE REHABILITATION PERIOD

The war has undoubtedly stimulated Burmese political development by at least a decade. Certainly it stimulated the vigorous growth of unions in the Rangoon region until about 20,000 of an estimated 50,000 laborers joined unions of

⁵ "Heiho" is a Japanese word, meaning "soldier's auxiliary." "Tat" is a Burmese word for "army."

one sort or another. The Communists were particularly active in this field, and continued to be active after their expulsion from the Anti-Fascist Peoples Freedom League, the dominant political group. However, the Trade Union Congress is affiliated with the Anti-Fascist League, which appears to spare no efforts to win the support of the labor movement, and seems to have a larger measure of support than both of the Communist parties, combined.

Mr. A. C. Baker, British labor specialist, arrived in Burma in February 1946, to assist the trade-union movement and organize a labor department. He has set up conciliation boards and committees of inquiry to assist in the settlement of individual strikes. The strongest individual union is that of the railway workers, but even it does not include a majority of eligible workers in numerous areas outside Rangoon.⁶

Wages have risen to about Rs. 70-80 per mensem for unskilled labor, against Rs. 20-25 before the war, just about keeping pace with official index figures for the cost of living.

The rehabilitation saw a great number of strikes, culminating in a police strike of September 1946, which approximately coincided with strikes by a great many other unions including railway, communications, and sawmill workers. The high cost of living, and inability of workers to maintain a customary prewar standard of living on their wages, appears to have been the chief cause of the strikes. The September strikes had both political and economic significance, and appear to have been a chief factor in enabling General Aung San and his colleagues in the AFPFL to assume leading positions in the Governor's council. Pyapon, district headquarters in the Delta southwest of Rangoon, also had a police strike which permitted a condition bordering on anarchy, for:

The crime situation in Pyapon District is rapidly deteriorating, says an official report. Since the Pyapon police went on strike the general populace of Pyapon in mobs of 1,000 or more people at a time have indulged in wholesale looting of rice mills and warehouses

⁶ This information was kindly supplied by Dr. Virginia Thompson Adloff, who visited Rangoon in April 1947.

not only in Pyapon town and the neighborhood but all over the district.⁷

The demands of the Joint Committee of Service Organizations for extra cost of living allowances were for great additional pay for low-paid workers, and no extra pay at all for workers drawing over Rs. 600 per mensem. Those drawing Rs. 30 and under were to receive a cost of living allowance of Rs. 60, while those drawing Rs. 100 were to receive an allowance of Rs. 100.⁸ The extremely difficult circumstances of laborers was generally recognized, but the Government was faced with an enormous deficit, and was loathe to add to that deficit, and to the inflationary situation, by major wage increases at a time when consumer goods were woefully inadequate.⁹

Concessions were eventually made, and the Supplement to the *Burma Gazette* of September 14, 1946, contained the report of the Board of Conciliation, appointed under the Trade Disputes Act to consider the plight of public workers and recommend measures "to counter the present high cost of living." The *New Times of Burma* on October 4, 1946, carried news of the settlement, which included substantial pay increases (though not as substantial as those demanded by the strikers).

Indian immigration must be considered in any discussion of labor in Burma. The Government of India has reviewed the position with regard to the movement of unskilled labor to Burma. By a notification in July 1941 under the Indian Immigration Act, migration of such labor to Burma was prohibited. Subsequently, however, evacuee unskilled laborers were exempted from the operation of the ban.

Owing to the unsatisfactory labor conditions in Burma and the lack of sufficient employment even for their Indian laborers

⁷ *New Times of Burma*, September 16, 1946.

⁸ *The Burman*, September 16, published a letter to the Governor, from Mr. E. Barnard, president of the Committee, which claimed to represent twelve different unions, including organizations among railway workers, communications workers, and employees of the Port Trust.

⁹ The official *New Times of Burma* published an editorial on September 1, 1946, recommending to the railway workers "the arguments along the above prescribed line by the Chief Railway Commissioner."

who are already in Burma, the Government of India has now decided to withdraw its general exemption in favor of evacuee unskilled laborers.¹⁰

THE FUTURE

Many commentators on Burmese economy have expressed the opinion that the Burman is not a satisfactory laborer, and hence the country must have a larger and larger body of cheap, docile Indian (or Chinese) labor. The present Indian government, headed by Pandit Nehru, seems unlikely to sympathize with this view, or to permit India to compete with neighboring countries by providing labor more easily exploited than indigenous labor. In any case, this view is incorrect and unfair to the Burman, for, as shown in the earlier portion of this chapter, many employers of labor were willing to admit that Burmans could work with considerable skill. They were less easily exploited than Indian immigrants, and would less willingly submit to poor working and living conditions. Their postwar organization into unions will doubtless reinforce their opposition to conditions which they dislike. Industrialization will probably enhance their competitive position considerably, for Burmans have proved quite able to hold their own in skilled and semi-skilled occupations.

Since Burmese population increased 14 percent between 1931 and 1941, and has probably increased considerably since 1941, there is no likelihood of an over-all shortage of labor in that country, unless industrialization proceeds at an unforeseen pace. In fact, it is precisely in handling and repairing machinery that the Burman has shown the greatest skill. Thus, the substitution of machinery for degrading and backbreaking work, such as carrying 200-pound bags of rice from boat to shore on the back of a 135-pound man, should be possible without large-scale importation of foreign labor.

That the restrictive policy of the Government of India prevented Indians from entering Burma in large numbers is attested by the fact that only 55,092 persons arrived in Burma

¹⁰ Government of India Information Service, quoted in the *Rangoon Mirror*, May 5, 1947.

from India during the first four months of 1947, against emigration to India of 44,876—a net increase by immigration of only 10,216 for the four months.¹¹ This situation nevertheless appears to have failed to satisfy Burmese opinion, and the *Burma Gazette Extraordinary*, of June 14, 1947, published the Burma Immigration Act, 1947, setting up a system of passports and visas to control immigration. The Act provides for rules to be issued separately, but does not contain provisions for exclusion of specific classes of immigrants. The *New Times of Burma* published a report on June 19 that the Government of India had formally protested against the law as discriminatory against Indians. The Burmese reply is that whatever rules are enforced will be administered without any discrimination against Indians, Chinese, or other nationalities.

¹¹ No reliable estimates are available for movements across the land frontier between Arakan and Bengal. It is believed that several thousand Indians have entered Arakan since the end of the war, with no offsetting efflux. Statistics cited in this paragraph relate to the port of Rangoon only, and are taken from the monthly *Survey of Departmental Activities*.

XXII

PUBLIC HEALTH AND VITAL STATISTICS

BURMANS are, as a race, clean as to their persons and fairly clean as to their immediate surroundings. However, lack of understanding of the cause of most diseases makes them tolerate extremely unsanitary conditions in their villages, and take almost no precautions against contamination of food or water or against infection from flies, mosquitos, and other insects. Although Burma's health record is not particularly bad compared to surrounding nations, it is deplorable from the standpoint of western European countries or from the standpoint of Americans.

BIRTH RATES

Official statistics relate to "Burma Proper" or the 38 districts of "divisional Burma," and exclude the Shan States, the Chin Hills, and much of northern Burma. However, over 85 percent of the population is included in the area covered by the statistics although that area is but 171,157 square miles out of a total area of 261,610. The birth rate in 1939¹ in these 38 districts was 35.3 per thousand, as reported to Public Health Department officials by village headmen. This figure is almost certainly an underestimate, as are figures for deaths. Headmen are unlikely to go to the trouble of making entries for births or deaths which do not occur, thus inflating the figures for birth

¹ Disturbed conditions have prevented the compilation of reliable vital statistics since 1939. See *Health Problems of Burma*, an interesting paper presented to the Asian Relations Conference at Delhi by Dr. Maung Sein, March 1947.

and death rates. On the other hand, there is ample evidence to show that they frequently do not take the trouble to record births and deaths which do occur, thus making official returns for birth and death rates unduly low. Moreover, it may be more than a coincidence that Myingyan District, with the lowest standard of literacy, according to the 1931 Census, also has the lowest birth and death rates. Its birth rate in 1939 was officially placed at 25.3, against a death rate of 20.5. Rangoon, and districts in the more literate Irrawaddy Delta, recorded considerably higher rates.²

Another reason for suspecting a considerable underestimate of the birth rate is the fact that the difference between it and the recorded death rate was about 10 per thousand, which indicates a 1 percent annual increase in population. But the actual increase in population between 1931 and 1941 was 14 percent, in spite of the fact that fairly complete statistics show immigration and emigration to be almost exactly equal. In other words, the rather reliable Census data show that the average difference between birth rate and death rate was 14 instead of 10 per thousand. It is perhaps natural that headmen should save themselves the trouble of recording some births, particularly when the babies have died by the time the headman gets around to make the record. Since deaths more often concern older people, well known to the headman, there is not quite the same tendency to inertia in submitting the required record.

Birth control is probably practiced to some extent by the small sophisticated urban population, but it is not known if it is of any importance in rural areas. Assuming, however, that the true birth rate is 5 or 10 per thousand higher than the recorded rate, it appears that the birth rate is little affected by contraception.

DEATH RATES

The official death rate in 1939 was given as 25.1 per thousand. As indicated above, this is believed to be an underestimate,

² The Dry Zone, including Myingyan District, is generally regarded as somewhat healthier than the Delta, so part of the apparent difference in death rates is probably genuine.

though not by as large a margin as the probable error in the recorded birth rate. The Public Health Department, with technical assistance from the Rockefeller Foundation, established a Health Unit at Hlegu, between Rangoon and Pegu, about 1930. One of the functions of this Unit was to keep a more accurate check on vital statistics. An immediate result was a very substantial *apparent* increase in both the birth rate and the death rate!

MALARIA

With the exception of Rangoon and a few other fortunate spots, malaria is a scourge which affects the entire country, and is undoubtedly the most important cause of illness and death.

A very large proportion of deaths reported by village headmen are ascribed merely to "fever" without elucidation. Observers agree that malaria is much the most important type of fever in most areas. For several years before the war there was a special officer of the Public Health Department detailed to study the mosquito and malaria problem of Burma, and direct the campaign for its solution. The Department's anti-malarial operations, however, were concentrated in the two highly malarious areas of Akyab and Kyaukpyu, on the Arakan coast, and Maymyo,³ and Lashio, in the Shan States. Minor operations against malaria were carried out at Sandoway on the Arakan coast, at Bhamo and Myitkyina in northern Burma, at Prome, Shwedaung, Henzada, and Syriam in Lower Burma, and at Salin in the Dry Zone.⁴ Thus, the Department had commenced work in almost all important sections of the country.

OTHER DISEASES

The other chief recorded causes of death in Burma were cholera, smallpox, plague, dysentery, and the family of respiratory diseases, including tuberculosis. The visitor must wonder why anyone survives in the Burmese village at all, in view of

³ Perhaps "highly malarious" overstates the case for Maymyo, Burma's pleasant summer capital, but it accurately describes much of the Shan States, including Lashio.

⁴ *Annual Report of the Department of Public Health* (Burma, 1939).

the fact that night soil is merely deposited on the ground for the benefit of flies, which breed unchecked, and which have little difficulty in lighting upon the food of most villagers. Moreover, water-borne diseases are encouraged by the practice, in many villages, of merely digging holes in the ground for "wells," and drinking unboiled water from such wells. This practice, coupled with the lack of sewage facilities mentioned above, gives maximum scope to a number of diseases.

Intestinal diseases are worst during the rains, and it is then that the transfer of germs from sewage and night soil to food is most prevalent. The 1939 public health records showed 1,572 deaths as due to diarrhea, but in view of the lack of medical knowledge on the part of all residents of most Burmese villages, such statistics are not of great value. The hospitals in 1939 admitted 91,328 cases of diarrhea and dysentery, and of course their record of 647 deaths must be accepted as accurate. Their records show June and July, the first two full months of monsoon, as having the highest incidence for intestinal diseases. The hospitals in 1939 reported 24,115 cases and 189 deaths from amoebic dysentery. For bacillary dysentery they reported 13,146 cases and 182 deaths. However, since most Burmans live and die without benefit of modern medical care, it would seem a fairly safe guess that cases of bacillary dysentery number more than 100,000 annually, the great majority of cases never having been brought to the attention of the hospitals.

The peak for cholera cases is reached late in the dry season and during the early rains—up to July. The year 1939 was unusual, however, the largest number of deaths being recorded in December. Cholera victims appear to visit the hospitals in exceptional instances only, there being but 330 cases and 74 deaths in hospitals in 1939, whereas the Public Health Department recorded no less than 1,351 deaths from cholera in the Pegu and Irrawaddy divisions alone. The Public Health Department, without very adequate staff or equipment, did its best to safeguard water supplies, and in 1939 it gave a total of 230,608 inoculations, of which 70 percent were in rural areas. It also distributed pamphlets and had its small staff give

lectures, wherever possible, to educate the public as to appropriate anti-cholera measures.

Smallpox is the disease against which the Public Health Department carried out its most successful campaign. Over 10 percent of the population in the areas covered—1,525,238 in all—were vaccinated in 1939. Recorded deaths in that year fell to the lowest figure since records were first kept, in 1872. The figure was 125, and since smallpox is more easily identified than some of the other diseases, that figure may be quite close to the true one.

Respiratory diseases probably have less scope in Burma than in similar areas in India and China because of the type of housing. Most Burmans live in bamboo and thatch houses from which it is impossible to exclude ventilation!

Intestinal parasites are extremely common throughout rural areas, where sanitation is almost completely absent and most of the population is shoeless. Probably hookworm infection is most common, followed by ascaris, beef tapeworm, and pig tapeworm, the latter being rather rare. Hospitals in 1939 treated 277,559 persons for ascaris (roundworm)⁵ against 1,623 for hookworm, and 1,100 for tapeworm. It is almost certain, however, that these represented an extremely small portion of those actually infected.

Yaws, beriberi, trachoma, skin infections of various kinds, and leprosy are among the other more important diseases. A survey of limited areas in Kengtung State indicated an incidence of approximately 1 percent for leprosy. A series of about ten American Baptist Mission leprosy colonies, in Kengtung, had approximately one thousand inmates, while the Italian Roman Catholic Mission had a somewhat smaller number in its colonies. Once more, it should be noted that most of those infected with this disease did not secure medical care of a modern sort or come within reach of those who gathered reasonably accurate statistics.

⁵ The reason for assuming that hookworm is more common than ascaris in spite of these hospital statistics is that the villager is almost certain to notice roundworms, whereas the hookworm is so small as to be identified with difficulty by a villager. Several years before the war approximately 80 percent of the inmates of Rangoon jail were found to have hookworm.

SANITATION

Throughout most of Burma sanitary measures were conspicuously absent. Flush toilets were found only in Rangoon and a few wealthy homes elsewhere, but the bucket-latrine system was rather common. In villages not even this rather inadequate sanitary measure was taken. The Hlegu Health Unit has had some success in popularizing the "bored hole latrine" whereby a large auger, procurable from the Unit, is used to dig a hole about 18 inches in diameter and 20 feet deep. The hole is fitted with a bamboo mat lining, and covered with a concrete "squatting plate." A few thousand of these latrines were placed in operation prior to the Japanese occupation but, unfortunately, their use had not become general. It was necessary first to persuade the Burman that there was a close connection between the disposal of night soil and the incidence of disease in his village.

Cattle dung accumulates in all villages as good breeding places for flies, and household refuse is usually dumped very close to the house. Wells are often without masonry to keep out surface water and the rains wash much filth into many wells which are the source of the village supply of drinking water.

Probably mosquito nets represented the most widely used sanitary or public health measure, but even they were not used by the majority of the people, and those who used them probably did so more to avoid the discomfort of being bitten rather than from an appreciation of the connection between mosquitos and malaria. Even the British residents ordinarily did not have wire screens capable of keeping out mosquitos. In place of the germ theory of disease, most Burmans believed all sorts of superstitions. Urban Burmans, of course, were coming to appreciate the value of sanitation and to adopt modern means of prevention and cure of disease, although much educational work still remains to be done, even in urban areas.

HOSPITALS AND PUBLIC HEALTH DEPARTMENT

There were 315 government hospitals in 1939, with 9,364 beds for free patients, besides a few private wards. They

treated 3,983,747 patients in that year and rendered much the greatest part of the competent, modern medical service given in the entire country. They were under the direction of the Inspector General of Civil Hospitals, the local hospital ordinarily being in charge of a Civil Surgeon, if in a District Headquarters, or of an Assistant or Sub-Assistant Civil Surgeon, if in smaller towns. The staff was recruited on a civil service basis, and was ordinarily quite competent. One Hindu and several Christian mission societies had hospitals, but such private hospitals were much less important, in the aggregate, than the government hospitals. The Moslim League maintained a popular dispensary in Barr Street, Rangoon.

The Director of Public Health had two assistant directors, and the following staff:

RURAL STAFF	URBAN STAFF
5 district health officers	8 second-class health officers
5 assistant district health officers	21 medical registrars
36 subassistant surgeons	136 public health inspectors
79 inspectors	93 vaccinators
20 inspectors of vaccination	
317 vaccinators	

It will be noted that the proportion of urban to rural staff was rather high, considering the predominantly rural nature of the population. In addition to the full-time public health staff listed above, a number of medical officers attached to civil hospitals were required to co-operate in urgent public health work when full-time public health workers were not available.

As indicated above, prevention of smallpox is the Department's most complete success. When smallpox or any other preventable epidemic breaks out, the department mobilizes its staff of vaccinators in the areas surrounding the affected village or quarter and vaccinates almost the entire population, thus localizing the worst incidence of the disease.⁶ The Department had its own facilities at Meiktila for the manufacture of lymph

⁶ The postwar Public Health Department is not as well staffed or equipped as its predecessors, but is improving constantly in both respects and is sending "epidemic mobile teams" to danger points. See *Summary of Departmental Activities*, January 1947.

and vaccines. The staff, both British and Burmese, had a very high *esprit de corps*, and engaged in propaganda work with great enthusiasm, using lantern slides, movies, loudspeakers, posters, pamphlets, lectures, and health exhibitions. It encouraged the digging of bored hole latrines before the war and in the few years before the outbreak of war in the Pacific it distributed millions of quinine pills, manufactured from imported material at the Rangoon Central Jail.

Perhaps the one time in the life cycle of the Burman when he is most ready to recognize the need of modern medical care is at the birth of his child. There were large numbers of midwives, under general supervision of government medical officers, practicing in the rural areas. In the Dry Zone, for instance, they were paid on the "results" system. They got Rs. 40 per mensem if they delivered the minimum number of babies, and were fined or given an extra Rs. 2 per baby according as the actual number was less or more than the basic minimum. Such women seldom had a knowledge of English and had seldom gone beyond the seventh standard (eighth grade). They had a few months to a year of specialized training before entering actively upon their profession. Even at that, they were a vast improvement over the ordinary indigenous midwife, and undoubtedly they saved many lives.

A highly successful aspect of the public health program was a school in Kemmendine (Rangoon) for "Lady Health Visitors." About twelve young women per year took the course of training and were sent out as friendly public health workers and propagandists among the women and children of the country. Their work has been very warmly praised by public health experts.

MEDICAL PERSONNEL

Most of the well-trained doctors and nurses of Burma were employed in government hospitals or by the Public Health Department. The elite were those with medical degrees from foreign medical institutions or from the Medical College of the University of Rangoon. The rank and file consisted of

graduates of the Rangoon Medical School, or of similar institutions in India, who received the certificate or diploma of a Licensed Medical Practitioner, and ordinarily joined the government service with the rank of sub-assistant surgeon. The work done in the Rangoon Medical School is somewhat similar to that of a recognized medical college, but it is not preceded by the standard preparatory training. In 1937 there were 1,521 on the official medical registry. Undoubtedly there were many others practicing medicine in the country, but the 1,521 probably included all but a few of those with proper qualifications.

The government medical staff in 1939 consisted of 22 members of the Indian Medical Service, 2 members of the Indian Medical Department, 101 assistant surgeons, 370 sub-assistant surgeons, 48 honorary graduates or licentiates, 636 nurses, 139 midwives, and 326 compounders. Most of these were employed in the 315 hospitals.

Nursing is a profession for which Burmans have ordinarily had little respect, and most of the nurses have been Karens and other non-Burmans. There has been a chronic shortage of trained nurses. Many hospitals engage Catholic sisters of varying degrees of previous training. There have been very few private nurses, even in the larger towns. Two government hospitals, both in Rangoon, and two American Baptist Mission hospitals, one at Moulmein and the other at Namkham, gave nurses' training through the medium of English. In addition, an Anglican Mission hospital at Mandalay provided nurses' training in the vernacular.

Only ten dentists were listed in the *Medical Register*, and all ten practiced in Rangoon, Moulmein, and Maymyo. There are, of course, many unregistered dentists, many of whom learned their trade by watching and assisting some other dentist for a few months. Many dentists were Japanese, later accused of espionage.

THE JAPANESE ERA

The Japanese appear to have appreciated the value of medical and public health work, and to have done about as well as

their very limited resources of personnel, medicines, and equipment would permit. This, however, was very much less than was done during the British period, as described in the foregoing. Vaccines were not available in sufficient quantity, and the quality was poor, so that the Government officially admitted 5,952 deaths from smallpox in the first five months of 1943—a phenomenal increase over the 125 deaths for the entire year 1939. Japanese troops sometimes shared their own inadequate medical supplies, such as quinine, with the local population, but without affecting the over-all situation.

Only about a third of the prewar hospitals remained open during the Japanese period. The Medical College was kept open, and appears to have had about the normal number of students, taught by the leading Burmese doctors formerly on its staff or serving under the preceding government. It suffered from shortage of equipment, however. The budget of Rs. 1,442,000 for public health for 1943-44 was far below prewar standards if, as believed, it included some or all of the expenditures by local bodies.

The Japanese instituted compulsory vaccination for all civilians using the railways, and some highways, ferries, etc. The Japanese army sponsored an anti-rat campaign.

However, the water and sewage systems in Rangoon and elsewhere deteriorated greatly under Japanese control, and the reduced number of Indian sweepers was unable to cope adequately with the problem of removal of night soil.

The district officers of Mandalay, at a meeting in December 1943, urged more births, and suggested that a married officer who did not have any children in three years should take a second wife, or at least divorce his wife and remarry. Evidently the "big-population" theory of the Japanese made some headway among Burmese officials, although there is no evidence that the advice was actually followed by Burmese officials or others.

POSTWAR HEALTH PROBLEMS

It is rather likely that the epidemics of the war period, coupled with sporadic compulsory vaccination campaigns, has

the Burman somewhat more health-conscious, now that the war is over. Yet there is need for an intensification of the health propaganda previously undertaken with slender resources but considerable imagination by the Public Health Department. Popularizing the professions of doctor and nurse, to encourage the best class of young Burman to enter these professions, seems much in order.

The public health and medical departments of the military administration, and later of the civilian government, went to work promptly to restore the ground lost during the war. One of the campaigns under way by medical officials is that against malarial disease, and a plan was considered, and then deferred, to import large quantities of penicillin from America.

The civilian government in particular was handicapped in rehabilitation work by a shortage of medicines. It also encountered a phenomenon new in Burmese medicine—some of the best doctors resigned from public service, in which their formerly adequate salaries were insufficient because of inflation, and went into private practice. In March 1947 it was reported that: "The recruitment of 35 Civil Assistant Surgeons by Government will relieve the acute shortage of doctors to some extent. Recruitment of Sub-Assistant Surgeons is being continued, but candidates are not coming in sufficient numbers."⁷

Public health specialists have suggested the relaxation of regulations which, in prewar Burma, prevented the public health worker from treating patients in the villages which he visited. Regulations were the permissible distribution of quinine and various other remedies. One means of popularizing modern medicines, tried by private welfare workers on a small scale before the Japanese invasion, is to leave boxes of medicines in selected villages. Responsible men or women can be chosen among the villagers to dispense the simple remedies according to printed instructions, and public health workers can make weekly visits for checking up on results and the replenishing of supplies in the local medicine boxes. If the villagers

can see the immediate and obvious results of *santonin* treatment for intestinal worms, for instance, they are likely to acquire a respect for modern science which will be of help in persuading them to adopt sanitary measures also advocated by modern science. They have seen airplanes and many engines of war—things which far transcend their experience or comprehension—so far as life in an average village is concerned. When they can connect the medicine box and public health precautions with the same type of science that makes the airplane fly, the prospects of securing widespread co-operation in public health work will be much brighter.

Another suggestion, based upon past experience, is the placing of a number of health units in rural areas throughout the country. The Rockefeller Foundation assisted the Government of Burma in starting the Hlegu Health Unit, which has been an outstanding and conspicuous success, and in the years just before the Japanese invasion was supported entirely by the Government of Burma. Intelligent and persistent public health teaching and demonstration throughout the rather wide area covered by the Unit made a perceptible difference in health and sanitation.

In general, it seems that if prewar trends in medicine and public health are resumed, and past successes followed up on a large scale, Burmese health will make steady, if unspectacular, improvement.

XXIII

CURRENCY AND EXCHANGE

BEFORE 1937

PRIOR to its separation from India on April 1, 1937, Burma had no separate currency system. The Indian rupee was standard. It was a silver coin, 180 grains in weight and 11/12 fine, stamped with the image of the King-Emperor (or Queen-Empress). Newcomers soon learned the art of "ringing" the rupee and other coins, for counterfeiting was a not uncommon "cottage industry." Subsidiary silver coins were of 8 annas (half-rupee) and 4 annas denomination, and nickel-zinc coins were of 4 annas, 2 annas, and 1 anna denomination. The smallest coin in general circulation was the copper one-piece, or one-fourth of an anna.

Until just before the Japanese invasion of 1941-42, the Rs. 5 note was the smallest currency note. The Rs. 10 note was the most popular, while other notes were Rs. 50, Rs. 100, and so on up to Rs. 10,000 value.

The Government of India maintained a currency office in Rangoon until 1935, when that office was taken over by the Reserve Bank of India, Rangoon Branch. This office issued new coins and notes in exchange for old ones, and never paid out a used note, even if in excellent condition. Hence most paper currency was rather new and clean. There were government currency chests in the district, subdivisional, and township headquarters, and these chests carried on limited financial transactions with the business community, besides assisting in collection of taxes and payments on behalf of the government.

The banking and check-using habits were not as well developed as in Western countries. For instance, for the all-im-

portant Indian commercial community, which normally settled transactions involving many thousands of rupees in currency notes, clerks of Indian firms would take fortunes in paper money from place to place on the railway or Irrawaddy Flotilla lines.

AFTER 1937

The separation of Burma from India on April 1, 1937, made little difference to the currency. The silver rupee and subsidiary coins of India continued to circulate as before. Special currency notes, for circulation in Burma only, were issued by the Rangoon Branch of the Reserve Bank, which bank was responsible for maintaining parity of exchange between Burma and India. Since the metallic coinage of the two countries was the same, that task was not difficult. After the outbreak of war in Europe the fineness of Indian metallic coinage was reduced as an emergency measure.

THE JAPANESE PERIOD

The Japanese issued notes of one to ten rupee denomination without specific promise to pay, and without serial numbers. For a time they issued paper notes for amounts less than one rupee to obviate the need for metal coinage. An estimated Rs. 3,000,000,000 worth of these notes was issued, but it is doubtful if anyone knows the exact amount. Much of this money was brought with the Japanese army. Apparently the remainder was printed in Rangoon. The Japanese military, and Japanese firms co-operating with the military, bought up all manufactured metal articles, automobiles, and much fine furniture, etc., as soon as possible after the occupation, and shipped the goods to Japan. There was never much return traffic in goods for civilian use, so the inflation went on merrily throughout the more than three years of Japanese occupation, intensified by payments to tens of thousands of Burmese labor conscripts. The more canny bought gold, diamonds, and other items which could be easily hid, as a hedge against inflation, but the price of gold went up to fantastic heights by the middle of 1944.

British Indian rupees and pre-Japanese currency notes sometimes circulated among friends, but the Japanese attempted to prevent their circulation, and did succeed in keeping circulation of British money at a low level. Those caught by the Japanese with silver money were arrested as spies.

The Burma rupee, during the Japanese occupation, was theoretically equated to the dollar of China, the Straits Settlement, and Sumatra, as well as to the guilder of Java, the baht of Siam, and the piaster of Indo-China. Like all the other currencies just mentioned the Burmese rupee was on the decimal system. In the absence of appreciable amounts of civilian trade between these countries, and of anything approaching free exchange of currencies and goods, it made little difference what the exchange rate was.

When Rangoon was recaptured by the British in May 1945, vast numbers of currency notes were found lying around looted banks and offices, without attracting a great deal of attention or cupidity. Prices had become so high as practically to ruin salaried people and to cause barter to increase greatly in importance. The British rupee was rather promptly recognized and sought after, eggs selling at 16 to the rupee very shortly after reoccupation. The sellers of eggs, fish, and other commodities greatly preferred commodities to money, however.

The Southern Regions Development Bank appears to have been charged with some responsibility for currency management, but the military would seem to have issued notes without regard to any management by the bank. It was announced that the Burmese National Bank was to take over currency management, but nothing of the kind appears to have happened.

About the time Rangoon was reoccupied, the Civil Affairs Service (British military government) announced that Japanese-sponsored currency was worthless, thus precipitating a small debate in the press of the United Kingdom and India as to the wisdom of the move. It is certain that this action saved a tremendous amount of clerical work, for the mere physical task of counting and exchanging three billion rupees, in denominations of five cents to ten rupees, would require a huge

clerical force, besides indirectly supporting the currency in Japanese-occupied parts of Burma. In 1947 debts contracted in 1942-45 (in Japanese-sponsored money) were recognized as legal, and an official scale of conversion to postwar rupees was published.

The wartime head of state, Dr. Ba Maw, has led a chorus of vigorous protest against British refusal to redeem Japanese-issued rupees. The argument is that the Burmese people were forced to accept these rupees and many ended the war with few other assets. Redemption of such a vast quantity of rupees, on the other hand, would place an enormous burden on a government and taxpayer already faced with a staggering load of rehabilitation costs. The people of Burma must pay the cost, in any case, and redemption would merely lead to a redistribution of wealth at great cost in salaries of many accountants, auditors, tellers, and clerks.

EXCHANGE

Since the Burma rupee was identical with the Indian rupee before 1937, and since the coins of the two countries continued to be the same after that date, there was no exchange problem as between Burma and its chief customer and supplier—India. The Indian rupee was kept at a rate of 1 shilling 5/2 to 1 shilling 6¼ by the Reserve Bank of India (after 1937), which bank dealt with the large "exchange" banks in carrying out this duty.

As noted above, domestic trade made use of currency in many cases where checks would be used in Western lands. Postal and telegraphic money orders were very popular and they were cheap. A money order for Rs. 25, for instance, costing only 4 annas (8 cents), gave the opportunity to send a few words as message at the bottom of the receipt. Remittance from up-country to Rangoon, however, often took place by means of a three-cornered transaction. Europeans with bank accounts in Rangoon often found their checks sought after by Indian merchants, who wished to remit to their head offices or wholesalers in this inexpensive manner. Registered mail was another popular means of transmitting money, and for amounts over

Rs. 35 it was even cheaper than the postal money order. Indian business firms, particularly Chettyars, used the subtreasuries scattered throughout the country for securing orders on Rangoon, and vice versa.

Money orders, in the prewar period, were the chief means of remittance between Burma and India. The annual total reached the surprising figure of Rs. 30,000,000. Part of this represented the profits of Indian merchants and moneylenders, but most of it appears to have represented the surplus over living costs of the hundreds of thousands of Indian laborers who went to Burma without their families and remitted as much as possible to their homes.

Large-sale exchange transactions between Burma and Europe and America, in particular, took place with the aid of the "Exchange Banks" mentioned in the following chapter.

The outbreak of war in Europe resulted rather promptly in the imposition of restrictions on the purchase of exchange on the United States and other nonsterling-standard countries. The Japanese occupation largely solved the problem of exchange, for with very little civilian trade between Burma and other countries, the need for exchange seldom arose. The return of the British with Indian rupees also simplifies exchange problems, for there is an automatic par between Burma and India, and a well-established schedule of rates between India and most of the other United Nations.

REHABILITATION

The financial adviser to the Government of Burma, Mr. M. L. Waight, announced in August 1946 that beginning April 1, 1947, Burma was to have a new and separate currency. A Currency Board, with headquarters in London, was to replace the Reserve Bank of India as the managing agent. Mr. Waight explained that a central bank was unnecessary for the present, as the development of commerce and industry did not necessitate such a bank at the time. Two of the five members of the Board were to be Burmans. In a talk before the Rangoon Rotary Club,¹ Mr. Waight explained that the Currency Officer would

¹ *Morning Star*, Rangoon, September 7, 1946.

be a Burman who would also be Chief Executive Officer. The official *New Times of Burma* summarized the scheme as follows:²

1. As from April 1, 1947, Burma will have its own currency managed and controlled by a Currency Board. Until supplies of newly designed notes are available, Reserve Bank of India notes overprinted "Burma Currency Board Legal Tender in Burma Only" will be used.

2. A Currency Board situated in London consisting of five members, two of whom will be Burmans, will be set up as from October 1, 1946.

3. The exchange value of the Burma rupee in terms of sterling will be exactly the same as the present rupee, that is, one shilling and six pence and one Burma rupee will equal one India rupee or one B.M.A. (military administration) rupee.

4. The assets supporting the B.M.A. notes and the value of assets supporting Burma notes will be transferred to the Currency Board as security for the new currency.

5. The assets taken over by the Currency Board will be invested mainly in specified sterling securities, but a small part of such assets will be invested in Government of Burma securities.

It was expected that the new currency would be entirely in paper until 1948, after which it was expected to reintroduce metal coins. It appears that the one improvement introduced by the Japanese—the decimal system—is to be scrapped and the old cumbersome system of rupees, annas, and pies will be continued. Mr. Waight explained that the British Military Administration had placed one shilling sixpence in a special London account for each B.M.A. rupee placed in circulation in Burma. This account will thus help bolster the separate Burma rupee.

Mr. Waight's announcement was favorably received by most articulate Burmese opinion. However, there was some sentiment for moving the Board from London to Rangoon as soon as the return of normal conditions made such a move feasible.³

It is obvious that there is no immediate intention to change

² August 17, 1946.

³ Than Tun in *The Burman*, August 30, 1946.

the rate of exchange with the United Kingdom or with India. The greatest present threat to Burma's currency stability is the prostrate economic condition of the country and the Government's greatly unbalanced budget. As soon as prewar exports and production are restored, these conditions should right themselves, and Burma should have no difficulty maintaining its currency on a par with that of India, its greatest customer and supplier.

That it is not easy to maintain the Burma rupee at par in terms of the Indian rupee is evidenced by the following Reuter's dispatch from Rangoon, dated May 13, 1947:

The Burma Government is likely to rescind its order of May 7 lifting the ban on silver exports, it is authoritatively learned here. The Government is considering this step in order to avert a possible panic resulting from the flight from the country of metal which it intends conserving for stabilizing the currency.

Press reports say that since the announcement of the Government's decision to lift the export ban, Indian merchants have been buying up all available silver rupees at prices ranging from one rupee six annas to one rupee ten annas per coin. There is also said to have been large-scale smuggling of silver coins from Burma to India and the Government is planning vigorous action against the smugglers.

Reuter adds that the Burma Government announced on May 7 that silver would in future be exportable under Government license subject to a tariff duty of three annas per ounce (troy).

By notification of April 1, 1947, the export of certain types of goods to the United States and other "hard currency" countries was prohibited unless the exporter furnished the Collector of Customs with a declaration that the foreign exchange received as a result of the export would be disposed of in a manner and in a period of time approved by the Controller of Foreign Exchange. Similarly, a notification of the same date required residents of Burma to list their holdings of United States securities and dispose of their United States dollars to the Controller of Foreign Exchange.

XXIV

BANKING

GENERAL SURVEY

BANKING and moneylending institutions in Burma ranged from branches of the largest British and American banks dealing with the financially elite, to the small village shopkeeper permitting his customers to wait until harvest to pay for their daily necessities, and charging them interest rates of considerably over 100 percent. Outside Rangoon, banking, as distinct from moneylending, was almost nonexistent. Merchants ordinarily kept liquid resources in strongboxes, and cultivators with any surplus invested it in gold, jewels, etc., or buried it in a bottle or box ten feet from the *kazin* (embankment) which was 100 paces due south of the village pagoda (or in some other secret hiding place, visited only in the dead of night). A few Europeans in most of the larger towns had banking accounts in Rangoon, upon which they drew checks in favor of local merchants, but the checking habit had been acquired by only a handful of Burmans or Indians outside Rangoon prior to the Japanese invasion. Although all types of banking business were performed by the leading Western banks, the provision of foreign exchange was their outstanding pre-war function.

RESERVE BANK OF INDIA

From 1935 central banking functions were performed by the Rangoon Branch of the Reserve Bank of India, with which

other "scheduled" banks were required to keep deposits. Bombay, Calcutta, Madras, and Delhi were the other four headquarters of this bank—all of them much more important, judging by deposits, than Rangoon. U Po Byaw represented the Rangoon Branch on the central board. This branch registered only 16,838 of the 500,000 shares¹ of the Reserve Bank in 1942. A few Burmans were employed, including U Chit Htun, who was made manager of the Japanese-sponsored Burma State Bank, organized in 1944. The Reserve Bank was in charge of the Rangoon Clearing House.

IMPERIAL BANK OF INDIA

This bank, organized in 1920 with headquarters in Calcutta, Bombay, and Madras, established branches at Rangoon, Mandalay, Moulmein, Bassein, Akyab, and Myingyan. It operated under a special Government of India charter, and prior to 1935 it performed some of the functions taken over by the Reserve Bank, such as sale of government bonds, acting as government depository, taking care of certain types of remittance business, and managing the local clearing house. Even after 1935 it continued to represent the Reserve Bank in hundreds of centers in Burma and India where the latter had no branches. It was a private stockholders' bank, but its rules were stricter than those of banks registered under the general banking act. British officials filled most policy-making posts.

EXCHANGE BANKS

The chief function of banks in Burma was that of facilitating foreign exchange transactions. It is but natural that this highly technical function should have been almost monopolized by a few branches of important banks with headquarters in London and other well-established Western banking centers. Six of the exchange banks, including the largest, were British, against three Chinese banks and one bank each for the Dutch,

¹ Valued at Rs. 100 each.

Americans, and Japanese. The list, in approximate order of importance (in Rangoon), is as follows:

British Banks:

Chartered Bank of India, Australia, and China
Hongkong and Shanghai Banking Corporation
National Bank of India (branch at Mandalay)
Mercantile Bank of India
Lloyd's Bank (two Rangoon offices)
Thomas Cook & Son (Bankers)

Chinese Banks:

Overseas Chinese Banking Corporation
Bank of China (branch opened also at Lashio, September 1940)
Bank of Communications (Rangoon office opened 1940)

American Bank:

National City Bank of New York

Dutch Bank:

Netherlands Trading Company

Japanese Bank:

Yokohama Specie Bank

Aside from the Reserve Bank of India and the Imperial Bank, the banks just listed had the most imposing buildings, the largest staffs, and made the greatest impact on Rangoon commercial life. They all accepted deposits, made loans, and carried on a general banking business in addition to their highly important exchange function. Practically all key positions were filled with British, Chinese, American, Dutch, or Japanese nationals, respectively, and almost all lower posts in the British, American, and Dutch banks were filled by Indians.

The Chartered Bank was the largest of all, and although comparative statistics have not been published, it is believed that the Hong Kong and National banks came next in size. Thomas Cook & Son specialized in travelers checks and other business incidental to tourist traffic, but they also accepted deposits locally. The Chartered Bank, as well as the National City Bank and some others, had well established connections with Chettyar firms, and aided certain Chettyars over periods of temporary seasonal shortages of funds. It should be noted,

of course, that total assets in Burma of Chettyars exceeded assets of the exchange banks by as large a margin as the impressive quarters of the Chartered Bank outshone the modest Mogul Street offices of the leading Chettyar firms.

The Overseas Chinese Bank did not have its headquarters in China but in Singapore, original home of many, if not most, of the Chinese merchants of Rangoon. Trade with Singapore was easier and many times larger in volume than trade with China, and this bank specialized in that trade, its Rangoon office being at the edge of Rangoon's Chinatown. The other two Chinese banks to open Rangoon branches did so after the opening of the Burma Road. Previous to that time the volume of trade between Burma and China hardly justified a Chinese bank in Rangoon.

The American, Dutch, and Japanese banks specialized in foreign exchange with their respective countries. The Yokohama Specie Bank was necessarily closed down after December 8, 1941, to reopen a few months later and participate in the liquidation of the branches of its chief rivals. The Southern Regions Development Bank opened a Rangoon branch after the outbreak of the War in the Pacific.

INDIAN BANKS AND MONEYLENDERS

Since the Chettyars of southern India provided most of their own capital, their deposit accounts being relatively small, they are often classified as "moneylenders" instead of "bankers," although they themselves prefer the latter term. Certainly they were much the most important part of Burma's financial community, judging by volume of business and economic impact on the country as a whole. The role of the Chettyars in agriculture was discussed under "Chettyars and Other Moneylenders," pages 66-67. It was pointed out that in 1930 their investment in agricultural loans amounted to an estimated Rs. 500,000,000, but that by 1936 that investment had shrunk very greatly, except as there is included the value of two and one-half million acres of Burma's best riceland, which had come to represent the principal Chettyar asset in Burma. In-

test rates had ordinarily been from 15 percent on up to exorbitant heights, depending on circumstances and type of security. Since interest rates were higher than the productivity of the land, it seems clear that the land was bound to pass into the hands of moneylenders eventually, whether or not there was a drastic fall in the price of paddy such as occurred during the world-wide trade depression of the 1930's.

A rough index of the effect of indebtedness upon cultivators was given by the Burma Provincial Banking Enquiry Committee in 1930. The Committee estimated that only 14 percent of the country's agriculturists were both free of debt and possessed of sufficient resources to stay out of debt until the next harvest. The breakdown given by the Committee was as follows:

	Percent
A. Those who are free of debt and have cattle and enough paddy to last till next harvest (or have money to pay their debts and buy so much paddy	14
B. Those not falling in Class A who would be able to pay off their debts if they used all their money and sold all their paddy but kept their cattle	25
C. Those not falling in Classes A and B who have debts which are less than half the value of their land	26
D. Those whose debts are more than half the value of their land but are less than the value of all their property	22
E. Those whose debts exceed the value of all their property . . .	11

In reading the foregoing figures it should be borne in mind that they relate to 1930, and that the world wide depression was just beginning to affect Burma at that time. Had the Committee made its report a few years later the situation would undoubtedly have been much worse, as evidenced by the rapid rate of mortgage foreclosures during the period 1930-36.

The Chettyars had an estimated Rs. 250,000,000 invested in various types of urban business in 1930, but there are no available statistics to indicate what proportion of that investment became frozen in the form of urban real estate prior to the Japanese invasion.

As might be expected, Indians participated to a greater

extent in the conduct of trade between India and Burma than their banks did in financing that trade. Rice export and cotton textile import, however, were largely in Indian hands, and in the years just before the Japanese invasion Indian banks came to participate noticeably in Indo-Burmese exchange, although even then they appear to have been much less important than the British banks. The well-established Central Bank of India was the only Indian bank which appeared to be on almost equal terms with the British banks in competing for business between India and Burma. The full list of Indian banks with branches in Rangoon is as follows: Central Bank of India; Bank of Chettinad (Chettyar firm, with branches in Maubin and Salin); Mohaluxmi Bank (branch in Akyab); Kerala Provincial Bank, Ltd.; Krishnaiyer & Sons; The India Bank, Ltd. (1940); Calcutta Commercial Bank, Ltd. (1940); and Bank of Asia (1939).

In the earlier decades many Indian banks had failed, and presumably this mortality had given the more stable European banks a great advantage. Nationalism and other factors, however, tended to cause more and more Indian merchants to turn to Indian banks for finance and exchange.

LOCAL BANKS

The Government of India issued "Statistical Tables Relating to Banks in India" from which is compiled the following list of banks with head offices in Burma as of 1936. Following the separation of Burma from India in 1937 it was no longer possible to secure an official and up-to-date list of such banks. These are: Dawsons Bank (Head Office at Pyapon, branches at Rangoon, Bassein, Bogale, Dedaye, Kyaiklat, Maubin, and Moulmeingyun); Balthazar & Son; Upper Burma Bank (Maymyo only); U Rai Gyaw Thoo (Akyab only); Irrawaddy Bank.

Lawrence Dawson, a Scot, gave up his law practice in Rangoon around 1910 in order to establish an institution which would apply modern banking principles to Burmese agricultural finance. The head office was Pyapon, but the leading officers spent much of their time at the Rangoon office. They

accepted considerable quantities of deposits from the general public, and hence the severe agricultural depression occasioned by the world-wide fall of cereal prices found the bank particularly vulnerable. It went into voluntary liquidation, and after a considerable period of litigation it was permitted to issue over five million rupees' worth of 5 percent debentures, redeemable at par in twenty-three annual drawings. In addition, there were first and second cumulative preferred shares, as well as ordinary shares. Up to the time of the Japanese invasion the bank paid interest on debentures regularly and in full, and was well on its way to liquidating all outstanding debentures—proof that its very heavy landholdings were being made to pay by thrifty estate management. In fact, by 1939 arrears on the preference shares were made up, and at the outbreak of the war in the Pacific, Dawson's had completely redeemed itself in public esteem.

Like the Chettyars, Dawsons was forced to take over great areas of riceland in order to protect its assets at the time of the depression. The bank appears to have proved an excellent landlord, but like the Chettyars it had to take careful precautions to ensure regular payment of land rent, interest, or principal—as the case might be—by the time the paddy left the threshing floor. Since this bank maintained payment of interest on all outstanding debentures and preference shares, while paying off more than a third of the debentures, there is no doubt that it made the paddy-growing business pay, for the bank was unable to sell a very large proportion of its holdings at reasonable prices. The following figures relating to this bank are copied from the *Rangoon Gazette Weekly Budget* of December 6, 1941:

ISSUES OF DAWSON'S BANK, LTD

	Authorized	Issued	Par Value	Paid Up
5% Debentures	Rs. 5,268,300	Rs. 4,018,300	Rs. 100	Rs. 100
10,041 7% First Cumulative Preferred (Tax Free)	1,004,100	1,004,100	100	100
2,219 7½% Second Cumulative Preferred . . .	500,000	221,900	100	100
3,000 Ordinary Shares . .	£1,500,000	£ 300,000	£100	£100
5,000 Ordinary Shares . .		£ 500,000	£100	£ 50

Balthazar's Bank was an adjunct of the general mercantile business of Rangoon's leading Armenian firm. The Upper Burma and Irrawaddy Banks were small. U Rai Gyaw Thoo was Arakan's leading banker and landowner, with numerous relatives in the government service and even in the cabinet. Perhaps it was partially because of the presence of this banking firm that the Chettyars did not thrive in Arakan as they did in the other rice-growing areas.

RANGOON CLEARINGHOUSE

Quite naturally, Rangoon had Burma's only clearinghouse, with about twelve member banks and daily clearings, formerly located on the premises of the Imperial Bank, and then in the Reserve Bank of India. Clearings in 1913 and 1928-36 were as follows:

CLEARINGS IN RANGOON, 1913-36

Year	Rupees
1913	619,800,000
1928	1,203,600,000
1929	1,221,700,000
1930	1,140,900,000
1931	819,000,000
1932	770,000,000
1933	578,200,000
1934	573,600,000
1935	685,100,000
1936	774,600,000

More recent statistics, compiled from the *Burma Trade Journal*, are as follows:

CLEARINGS IN RANGOON, 1939-41

Year	Number of Checks	Rupees ²	Dollars ²
1939	854,282	945,718,128	314,485,217
1940	886,502	1,086,827,123	325,937,921
1941 (9 months)	743,313	1,201,195,906	360,358,692

The foregoing totals are quite small when compared with Western cities of the same size. For instance, New Orleans,

² The rupee was valued at \$0.35 from January to July 1939; at \$0.34 in August 1939; at \$0.29 in September 1939; at \$0.30 from October 1939 to August 1940; at \$0.2994 from October to December 1940; and at \$0.30 for the first nine months of 1941. Its 1947 value is also \$0.30.

a city of approximately the same size as Rangoon, had clearings about six times as great as those of Rangoon in 1939-41, and there were other clearinghouses as well as other commercial, manufacturing, and financial centers within a few hundred miles of New Orleans-- whereas Rangoon was the only center of importance in Burma. The reason may be found not merely in the lower per capita income in Burma, but also in the much greater use of cash in settling transactions in Burma than in the United States. The foregoing figures suggest that the opening of the Burma Road must have been a chief factor in increasing the business of Rangoon's banks, bringing in, as it did, numerous British, American, and Chinese firms which necessarily used local banking facilities.

INDIGENOUS MONEYLENDING

Neither the Burma Provincial Banking Enquiry Committee, 1930, nor any other investigator has compiled statistics setting forth the business of Burmese indigenous moneylenders. They are to be found in considerable numbers throughout the country. In fact, a very considerable proportion of the landlords are also moneylenders, many of them having acquired most of their land through lending money and eventually accepting the land itself in payment of the loan. Few observers argue with the Chettyars when the latter, in defense of their own interest rates, point out that the Burmese moneylenders charge even higher rates. One reason for the higher rates charged by the Burmans appears to be the greater risk involved in making loans on land unacceptable as security by the Chettyars. At least such was the position up to 1930. Since that time the world-wide depression brought with it the fall in paddy prices and wholesale foreclosures. As a result, Chettyars have made very few loans since that date, ordinarily confining those loans to tenants on their own lands. Thus the field has been wide open for Burmese moneylenders to operate on as large a scale as their capital permits.

Judging, however, by the prohibitive rates of interest and the difficulty with which any money at all could be borrowed,

instance, by a tenant desirous of becoming a landowner, thus that indigenous finance is quite inadequate to cope with the demand. For the most part it has been limited in recent years to advances to tenants working on the estates of large owners.

CO-OPERATIVE BANKING

Co-operative banking has been described in some detail in chapter vi. It has often been cited as an outstanding hope for solution of Burma's problem of rural indebtedness, and some real success was being achieved in the years just prior to Japanese invasion. It still constitutes an important part of the plans for postwar reconstruction in Burma, and a promising start has been made in the revival of the movement.

INSURANCE

Insurance business in Burma was as limited, in proportion to the size of the country and its population, as banking business. Steel Brothers and other large mercantile firms carried the customary types of fire, casualty, and marine insurance, their customers were ordinarily the large European, Indian, and Chinese firms. Fire insurance was sold in district headquarters, but difficulty was often encountered in the form of double insurance, until the firms began exchanging necessary information to stop this practice.

The Sun Life of Canada and a few other Western companies did a small life-insurance business, and shortly before the outbreak of the Pacific war several Indian companies set up agencies in Burma.

RANGOON STOCK EXCHANGE

Rangoon had no well-established stock exchange like those of Bombay or Calcutta. In fact, the Rangoon quotations were based largely upon quotations in those cities. A majority of the Indian stockbrokers transacted their business on the pavement at the corner of Merchant and Mogul Streets, but a few leading Indian firms predominated. The leading European firm

had an office in the Balthazar Building on Merchant Street and issued quotations of prices which were published by the newspapers as the prices of the "Rangoon Stock Exchange."

THE JAPANESE PERIOD

In view of the fact that commercial imports were very small from the beginning of the Japanese invasion, whereas expenditures by the Japanese army were enormous, inflation soon set in, and by 1944 it reached alarming proportions. An economy subject to inflation is one in which people do not usually entrust their money to banks for long periods and hence it is an economy in which banking is of much less importance than it would be in a normal and stable economy.

The Yokohama Specie Bank promptly returned to Rangoon in 1942, and set up branches in Maymyo, Moulmein, Prome, Bassein, Taunggyi, Lashio, Toungoo, Tavoy, Mergui, Myingyan, and Mandalay. Its efforts were supplemented by the Southern Regions Development Bank. The Yokohama Specie attempted to liquidate British and other banks, offering to pay up to 10 percent on deposits in those banks if documentary proof were forthcoming, and requesting debtors to pay it for loans advanced to them by the British banks. Debtors and creditors alike ignored the request. Deposits in Japanese banks (or in other banks during the Japanese period) were very small in proportion to total currency circulation.

In 1943 the Bank of Chettinad—most important and best-organized of the Chettyar firms—was refashioned into the People's Bank of Burma, with the aid of the Burmese Government, the Japanese Military Administration, and the Yokohama Specie Bank. Some Chettyars were left on the Board of Directors, and Chettyars managed some, at least, of the numerous branches (said to have numbered forty-five). However, there can be little doubt that the Japanese exercised real control over the affairs of the bank. It seems to have made few loans and to have received relatively few deposits. It may have had some success collecting interest on old loans by Chettyars, but such success was probably not very great.

The Azad Hind Bank, connected with the Indian National Army and the "Provisional Government" of Subhas Chandra Bose, appears to have confined itself to financial operations in connection with the support of that army.

The Burma State Bank was organized on January 15, 1944, with U Ba Maung, successful manager of the Pegu Central Co-operative Bank, as president of the Board of Directors. His younger brother, U Chit Htun, formerly employed by the Rangoon branch, Reserve Bank of India, was the bank's manager. It appears to have been principally a channel through which vast quantities of irredeemable paper money were issued, and there is evidence that it helped support the government and its operations. There is evidence that its earnings or deposits were proportionately small. It had plans for opening numerous branches, but the advent of Japanese rule was insufficient for the implementation of its ambitious program.

THE REHABILITATION PERIOD

Several of the British exchange banks returned to Rangoon soon or promptly after the reoccupation. In view of Burma's inability to export many commodities, and consequent inability to purchase very much abroad, the scope for such banks was naturally limited. The only American bank—the National City Bank of New York—has not yet returned, for Burma's economic condition and existing exchange restrictions in favor of trade with the sterling area countries make large-scale trade with non-British countries virtually impossible.

The *Burma Gazette* of April 27, 1946, carried a renewed notice of the "Moneylenders Act, 1945" first notified from Rangoon on October 13, 1945. It provided for:

1. Registration of all moneylenders. Those who did not register would be unable to use the courts for recovery of loans.
2. Keeping of accounts in prescribed form, and issuing of receipts in prescribed form.
3. Inspection of accounts by authorized officials.

4. Maximum rates of 12 percent for secured and 18 percent for unsecured loans.
5. The courts may reopen moneylending transactions at any time within six years.

This Act applied throughout British Burma from November 2, 1945. It is extremely unfortunate that some such measure was not enacted and enforced in the prewar period, well before the 1930 depression. It should be noted in fairness to the Chettyars, however, that there were few if any substantiated charges against them relating to accounts, receipts, etc. Moreover, after the onset of the depression, such few loans as they made appear to have been at lower rates than those previously prevailing.

Reference was made at the end of chapter v (pp. 85-86) to the government program for the issue of large numbers of loans through co-operative societies and also direct to individuals in order to stimulate agricultural production. The loans appear to have been greatly appreciated and to have been of some assistance in stimulating production. There is much organized agitation, however, to have the loans regarded as gifts. For this reason it is too early to judge the soundness or success of the scheme.

FUTURE PROSPECTS

Most schemes for solution of Burma's agrarian problems lay heavy emphasis on solution of the land-tenure problem and particularly on repurchase of land from Chettyars and other large absentee owners. Few would suggest that the Chettyars, Burmese moneylenders, Dawson's Bank, and similar private prewar sources can cope with this huge problem. Thus, one is necessarily forced back on plans for some form of state bank or state credit extended through co-operative credit societies.

Various plans have been worked out by officials and non-officials for setting up state land mortgage banks, as well as smaller credit unions for the provision of short and intermediate-term loans. These latter would ordinarily operate with honorary (unpaid) managing committees to keep down the

overhead costs and the rate of interest. In the final analysis, however, it would seem essential that the Burma Government provide hitherto unheard-of sums if even a tolerable solution of Burma's problem of rural indebtedness is to be found. This is no simple matter, for, as will be shown in the following chapter, the budget is woefully unbalanced and prospects for tapping new sources of public revenue are poor, whereas needs for government expenditure on rehabilitation are immense. Moreover, the cry of peasants' unions and others for regarding the loans given out in the spring and summer of 1946 as gifts does not increase prospects for setting up a sound system of rural finance under government sponsorship.

The provision of finance for urban life appears to be much less difficult, provided the assumption is made that British, Indian, and Chinese firms are going to continue in possession of a large sector of Burmese commerce and industry. The Exchange Banks, as well as Indian and Chinese banks, will presumably be in a position to provide adequate exchange and general banking facilities. Should the present or a similar national government continue in power, it may commence to implement a policy in the field of credit which would provide for state banking on a large scale to care for Burmese enterprises engaged in industry and trade. The problems to be encountered by such a program would seem to be formidable, although not necessarily insurmountable.

XXV

PUBLIC FINANCE

SUMMARY

BURMA was part of India until April 1, 1937. Thus there were only four years and eight months of fairly normal operation of the Burmese budget before the outbreak of war in the Pacific engulfed Burmese economy. In fact, the onset of war in Europe occurred only two years and five months after separation, and Burma's customs revenues and certain types of expenditure were influenced thereby. The opening of the Burma Road in January 1939 also influenced the country's fiscal affairs.

Prior to separation, customs, income tax, salt revenue, and excise duties were collected as central revenue by the Government of India. On the other hand, the salaries of most of the higher officials, with corresponding pension payments, were debitable to Indian central revenue. Defense, of course, was a central responsibility as long as Burma was part of India. Customs duties were not levied on goods from India until a few months before the outbreak of war in 1941.

Land revenue and customs were the chief revenue items, while police and pensions were the chief expenditures until 1939-40 when defense loomed larger. Burma's debt was Rs. 565,442,000 on July 31, 1941, over half of which represented capital investment in the Burma Railways. Thus the debt was quite small in proportion to population and national income.

In view of the rather chaotic state of Burmese economy generally during the Japanese occupation, and in particular in view of the progressive inflation of Japanese-issued currency, Burma's wartime finance may be dismissed as of little impor-

tance except as a lesson to posterity. Inflation soon made government salaries seem insignificant—a month's salary of a junior official often being insufficient to buy one change of clothes. Naturally bribery and corruption flourished more than in normal times, as harrassed officials tried to secure enough money to keep pace with the rising cost of living.

Under the Government of Burma Act (Section 374) "No burden shall be imposed on the revenue of Burma except for the purposes of Burma or some part of Burma." Numerous items in the budget were "non-votable" and hence subject entirely to the discretion of the Governor. These included his own salary and allowances and the salaries and allowances of numerous senior officials, as well as charges on pensions, ecclesiastical affairs, etc. Most expenditures, however, were subject to legislative debate and vote, bills being first introduced in the House of Representatives. The Auditor General was a crown appointee, and was removable only "in like manner on like grounds" as judges of the High Court.

REVENUE

Burma's revenue for 1940-41 was officially given as Rs. 174,210,000. It is interesting to note that this is 65 percent greater than the 1940 revenues of French Indo-China, with a considerably larger population, and 22 percent greater than the Siamese central revenue for the same period. In the case of Indo-China, however, it is likely that local units (i.e., the five "countries" of the Indo-Chinese Union) bore a larger share of total expenditures than was borne by the corresponding local units in Burma. Table 37 (p. 318) gives budget and actual figures for revenue during the entire period between separation from India and the Japanese invasion.

It will be noted that land revenue stood first in four out of five years. The assessment of land revenue was carried out by a long and careful process. Each of the thirty-seven regular districts was "settled" every twenty or thirty years by a party under the control of a senior civil servant. This party of about fifty, including menials, spent about two years in surveying

TABLE 37
REVENUE RECEIPTS OF THE GOVERNMENT OF BURMA
(In thousands of rupees)

Sources of Revenue	1937-38	1938-39	1939-40	1940-41 (Estimate)	1941-42 (Estimate)
Principal heads of revenue:					
Customs	42,306	36,403	31,757	38,500	40,616
Excise duties	13,763	13,598	17,270	15,702	16,914
Taxes on income	15,943	19,691	18,449	19,357	19,886
State lottery .....	.....	1,016	1,000	2,438	2,200
Land revenue	41,925	54,187	51,039	50,765	46,795
Excise revenue	3,100	6,385	9,849	11,017	11,225
Stamps	3,089	3,414	3,316	3,286	3,397
Forests	16,046	14,276	14,563	13,355	13,212
Other principal heads of revenue	1,782	1,312	1,479	1,511	1,475
Irrigation	3,073	23	973	928	804
Debt services	218	43	146	98	1,079
Civil administration	4,682	4,941	5,191	5,774	5,561
Other receipts	6,647	5,553	6,883	16,449	8,181
Total	178,949	164,270	171,432	174,210	171,918

* Source: "Annual Financial Statement of the Government of Burma," published in the Government Gazette, February 1939, 1940, and 1941.

practically every square yard of agricultural land in the district, making detailed maps showing the contour of every *kazin* or embankment. The local *thamadis*, or advisers, went with settlement officers over every tract of land, giving opinions as to the fertility, liability to flood, etc., of each *kwet* (area surrounded by embankments) even though the average *kwet* covered much less than an acre.

The party then worked out a normal gross outturn for the better quality land, and an assumed cost of production, the balance being "nett produce value" upon which was based the revenue payable for the twenty years or more until the next settlement (except as special exemptions might be granted in the interim). It was sometimes found that the application of this system to poorer qualities of land gave costs higher than normal gross outturn, thus making the system unworkable. In actual practice, therefore, the rents actually paid, the gross outturn, and other factors were taken into account to determine the rates payable on inferior grades of land.

The system appears to have been fairly satisfactory to landowners as long as prices were rising, but when in the 1930's there was a drastic fall in the price of rice, with no corresponding fall in land revenue (no fall at all, in most cases), the burden of the tax was the cause of frequent and loud complaints.

Perhaps the most readable account of Burma's land revenue system is found in J. S. Furnivall's *Political Economy of Burma*.¹

Land revenue includes numerous other items in addition to the direct taxes on land, as described in the foregoing. For instance, the 1941-42 land-revenue estimates break down as shown in the tabulation on the following page.

The thathameda and capitation taxes were originally somewhat similar to income taxes, but in course of time they had become equivalent to a head tax, or a household tax. It had come to be a flat tax per household, being called a thathameda tax in Upper Burma and a capitation tax in Lower Burma.

¹ Furnivall, *Political Economy of Burma* (Burma Book Club, Rangoon, 1938), pp. 246 ff.

The first Ba Maw government, in 1937, decreed the gradual abolition of both taxes, and the 1941-42 budget was the last in which they appeared.

LAND REVENUE RECEIPTS, 1941-42

(*Budget estimates*)

	Rspees
Land revenue proper	38,897,000
Fisheries	2,550,000
Capitation tax	74,700
Thathameda tax	174,700
Petroleum royalties	4,000,000
Mining royalties	1,027,000
Other net receipts	71,600
Total	46,795,000

Opium and liquor contributed about equally to the excise duties. Opium smoking was much more common than in Western countries, both because of the presence of a considerable Chinese minority (Chinese being the chief users in Burma as in many other countries), and also because of proximity to extensive opium-growing areas in the Shan States and the Kachin Hills. Opium could be smuggled in from these areas and sold more cheaply than in the West, in spite of constant and commendable vigilance on the part of the Excise Department staff and frequent arrests and convictions. There were Government-controlled shops for the sale of opium to license holders, and official efforts were directed toward reducing the number of such holders with consequent reduction in the revenue from this source.

Liquor drinking was much less common in Burma than in Europe and America, perhaps chiefly because of religious taboos. Young Burmans with European and American educations, however, often returned from abroad with a taste for strong drink.

Comparison of receipts under the heading "Forests" with expenditures under the same heading (see Table 37, p. 318) indicates that forests were run at a handsome profit to the government, although commercial firms did most of the actual marketing of teakwood.

Customs revenues were almost of equal importance with land revenue, even before the 1941 Trade Agreement which would have permitted the taxation of goods entering Burma from India. It should be noted that nearly three-fifths of Burma's imports came from India, and hence were not subject to tariff duties before 1941. In the postwar period, therefore, the taxation of Indian products, even at the mild rates agreed upon in 1941, should soon cause customs to take first place among sources of income.

Income taxes were ordinarily collected at source, and were similar to the taxes in force in India. From April 1, 1941, income and super taxes took about 3 percent of incomes between Rs. 2,000 and Rs. 3,000 per year, about 8 percent of incomes between Rs. 10,000 and Rs. 15,000, and approximately 25 percent of those over Rs. 100,000 annually.²

A source of revenue which was of negligible importance before the war, but which may eventually become significant, was motor-vehicle taxes, which, under the heading "Other Principal Heads of Revenue" (see Table 37) amounted to Rs. 628,000 in the 1941-42 budget. Even that figure was considerably above normal prewar receipts on account of the increased volume of motor traffic occasioned by the Burma Road.

EXPENDITURES

Burma's expenditures were below revenue receipts in the immediate prewar period, and only in 1940-41 and 1941-42 did they increase so rapidly as to give a slightly unbalanced budget. The figures of expenditures from the separation from India in 1937 to the last prewar budget are given in Table 38.

As noted above, Burma's forests much more than paid their own way. Likewise, receipts from land revenue were many times larger than expenditure on land-revenue assessment and collection. On the other hand, the Burma Railways, although state-owned, had a separate budget. Were this not so, the item "Interest" (Table 38) could not be around the six-million

² Government of Burma press communiqué, *Rangoon Times*, April 20, 1941.

mark, in view of the fact that Burma's total debt was over five hundred million rupees. Roughly 40 percent of Burma's public indebtedness related to items other than the Burma Railways, and it is only the interest on that portion which is included in Table 38.

TABLE 38
EXPENDITURES OF THE GOVERNMENT OF BURMA*
(In thousands of rupees)

Items	1937-38	1938-39	1939-40	1940-41	1941-42
Land revenue	4,942	5,464	5,290	5,479	5,000
Forests	5,990	6,085	6,134	6,026	5,933
Interest	4,904	6,747	6,869	6,790	6,596
Debt refunding	10,128	8,615	8,772	9,412	9,872
General administration	11,153	11,452	11,750	12,554	11,997
Justice	5,548	5,532	5,483	5,615	5,498
Jails	3,280	3,420	3,415	4,172	4,156
Police	15,438	15,649	15,520	16,107	15,765
Education	8,364	9,494	9,773	10,036	10,862
Medical	4,346	4,701	4,497	4,592	4,607
Agriculture	1,623	1,669	1,416	1,270	1,364
Civil works	13,627	12,739	12,159	12,910	12,199
Pensions	14,647	14,733	14,708	16,489	15,512
Other non-military expenditures	24,094	28,432	27,619	29,871	30,103
Military expenditures:					
Defence services effective	13,420	13,428	15,152	29,498	35,555
Defence services non-effective	367	397	429	467	478
Frontier force	5,925	5,979	6,022	7,282	7,331
Totals	146,253	154,006	154,298	178,570	182,768

*Source: *Financial Year 1937-38, Ministry of Finance, Government of Burma*, Fiscal years 1938-39 and 1939-40, *Burma Trade Journal*, February, 1941, and the Ministry for subsequent years.

An item in the expenditures table which should be noted is "Debt Refunding." In 1939-40, for instance, Rs. 8,772,000 was paid off on the national debt and still there was a revenue surplus of Rs. 17,204,000. Only in 1940-41, under the stress of greatly increased military expenditures, did the deficit exceed provision for debt refunding.

It was a common practice in prewar Burma to distinguish between "nation-building" and "administrative" functions of

the Burma Government. The former consisted chiefly of education, public health, agriculture, co-operation, cottage industries, and public works. The latter consisted of general administration, courts, jails, police, etc. According to the *Second Interim Report* of the Fiscal Committee, 1938:

. . . . the nation-building services on which the well-being and prosperity of the country in considerable measure depend have been and still are sacrificed to an undue extent in favour of the more purely administrative services.

While it is easy to see that education or the building of a new road may make a permanent improvement in the nation, it is not so clear that general administration deserves less public esteem. Unless law and order are maintained and taxes fairly collected, it would seem fruitless to attempt to increase support to schools and other desirable public undertakings.

The Chairman of the Fiscal Committee was Mr. James Baxter, the financial adviser, who had previously served in the same capacity in Siam. The 1938-39 expenditure on education in Siam was 14,700,000 baht, or about 88 percent more (taking current exchange rates into account) than the Rs. 9,494,000 included under education in the Burmese budget. In both cases there were local schools, monasteries, mission schools, etc., wherein the central government made no financial contribution, or a partial contribution only. Thus the figures cited above seem roughly comparable. It should be noted, however, that in 1932-33 the Siamese expenditure on education was only 5,200,000 baht. A vigorous campaign for universal literacy had nearly trebled the budget by 1938-39.

On the other hand, Burmese expenditures on medicine and public health considerably exceeded Siamese expenditures, being Rs. 5,799,000 against 2,067,275 baht. On balance, therefore, it would seem that Burma was approximately in step with its sister nation in regard to public provision of "nation-building" services. The Burma highway system was somewhat more complete and adequate than that of Siam, and the Department of Agriculture in Burma appears to have been somewhat

ahead of its Siamese counterpart, but the co-operative movement seems to have had greater government stimulus in Siam than in Burma, and there were greater efforts on the part of the state to bring Siamese citizens into control of large industrial and commercial enterprises in a manner not yet attempted by the Government of Burma.

DEBT

Burma's debt was remarkably small, amounting to only Rs. 565,442,000 or less than Rs. 34 per capita. If the approximately Rs. 330,000,000 owed to India on account of the Burma Railways is excluded, the debt works out at a little over Rs. 14 per capita. Since the Burma Railways had begun to earn the full 3½ percent interest on its capitalization with the opening of the Burma Road, it seems fair to take the lower figure for per capita debt. The breakdown of the Government of Burma's total indebtedness is as follows:

Particulars	Amount Outstanding on July 31, 1941 (Rupees)
Burma's debt to India	486,916,000
Post office savings bank deposits	23,236,000
Provident funds and other unfunded debt	21,710,000
Burma Railway Board	23,781,000
a) Provident fund	Rs. 12,595,000
b) Depreciation reserve fund	Rs. 6,186,000
Post office five-year cash certificates	9,799,000
Total	565,442,000

It was expected that the debt to India would be paid in full by about 1980. However, a decade of peace and of profitable operation of the Burma Railways could enable a much more prompt liquidation of the country's outstanding debt. On the other hand, war and the Japanese invasion, with necessary rebuilding of much of the Burma Railways and innumerable bridges, together with unknown but very large expenditures on many aspects of rehabilitation, will increase Burma's debt several fold within the next few years.

THE JAPANESE PERIOD

The Japanese-sponsored Ba Maw government published a *Financial and Economic Annual* in July 1943, giving the figures shown in Table 39.

TABLE 39
REVENUES AND EXPENDITURES UNDER THE JAPANESE

Source	Rupees 1942-43*	Rupees 1943-44†
Customs	177,295 ‡
Income tax	2,207,322	8,024,000
Excise		6,052,000
Excise duties }	2,744,997	{ 5,348,000
Registration	14,118	222,000
Registration of motor vehicles		89,000
Other taxes and duties	68,333	10,000
Land revenue	6,484,220	32,281,000
Forests	462,324	7,623,000
State lottery	98,008	800,000
Stamps	193,394	1,764,000
Administration of justice	272,923	780,000
Police	446,846	421,000
Miscellaneous (special)	5,700	.....
Adjustment with Nipponese Military Administration	6,590,000	.....
Miscellaneous (Peace Preservation Committee, etc.)	1,261,751	100,000
Local rates and taxes	580,780	.....
General administration	78,097	.....
Jails	10,160	.....
Medical	2,164	215,000
Public health	3,691	.....
Education	3,680	391,000
Stationery and printing	21,404	20,000
Agriculture	16,894	.....
Irrigation	74,929	608,000
Civil works	9,456	.....
Co-operative credit	2,283	.....
Industries	70	.....
Posts	5,264	2,146,000
Taxes on mills .....	.....	1,437,000
Succession tax .....	.....	100,000§
Interest .....	.....	100,000
Recovery of old loans and lost funds .....	.....	200,000
Brought forward .....	.....	1,000||
Total revenues	21,836,103	68,732,000

* Eight months ending March 31, 1943, actuals.

† Year ending March 31, 1944, estimates, possibly far from the actual results.

‡ "Customs revenue is not shown in the budget for 1943-44; but it is likely that a considerable sum is forthcoming as the revenue realized under this head for the previous financial year is nearly Rs. 3 millions."

§ Rates of tax:

Produce of ricemills	Rs. 5 per 10 tons
Produce of sawmills	Rs. 5 per 10 tons
Produce of oil mills	Rs. 5 per 100 viss
Produce of wheat flour mills	Rs. 1 per cwt.

|| After this budget was made up it was discovered that the balance brought forward was about Rs. 4,500,000.

TABLE 39. (*Continued*)

EXPENDITURES	
Departments‡	Rupees
Police (5 items)	4,108,850
Local District Commissioners	1,514,046
Public Works Bureau	920,031
Bureau of Education	868,655

‡ The expenditures reported officially for the eight months ending March 31, 1943, amounted to Rs. 13,987,083, broken down into 68 items, the chief of which were the four specifically noted.

Budgeted expenditure,**	Rupees
Prime Minister's Department (Propaganda, etc.)	5,101,832
Ministry of Finance	2,364,080
Ministry of Home Affairs (Police, etc.)	17,064,971
Ministry of Lands and Agriculture	3,091,354
Ministry of Reconstruction and Public Works	5,254,168
Ministry of Commerce and Industry	665,995
Ministry of Judicial Affairs	4,493,925
Ministry of Forests and Mines	3,133,868
Ministry of Commerce, Labour and Industry	5,810,443
Ministry of Education, Public Health and Municipal Affairs	9,649,906
Civil Defense Services	190,935
Burmese Army	12,087,050
Extraordinary charges	1,423,473
Capital outlay on Paddy Purchase Scheme	58,685,140
Loan to Corporation of Rangoon	250,000
Miscellaneous	100,000
Total	129,417,140

SUMMARY

Items	Rupees 1942-43	Rupees 1943-44
Revenues	21,836,103	66,732,999
Expenditures	13,987,013	129,417,140
Surplus	4,661,743†	—
Deficit	—	66,625,140

** Budgeted expenditures for the year ending March 31, 1944, as reported.

†† This sum is not the difference between the two years' items, because there was Rs. 10,353,433 paid to the Nipponese Military Administration against a credit of Rs. 7,166,156 from the same source.

It is very doubtful if the foregoing figures bore a close resemblance to the actual state of affairs in war-torn Burma. The progressive inflation experienced by the country throughout the period of Japanese occupation is ample evidence that the budget was much more out of balance than would be indicated by the figures just cited. Of course, much of the money spent in Burma during that period was spent directly by the Japanese military authorities, who issued vast quantities of notes printed in Japan. In a sense, such expenditures do not

concern the budget of Burma. However, their inflationary effect helped to reduce the purchasing power of money disbursed by the Ba Maw government, and generally handicapped that government in carrying out its functions.

A reform claimed by the Finance Minister in the *Financial and Economic Annual* was the collection of land revenue in kind. An obvious and laudable precaution against inflation! Excise duties appear to have covered a considerable range of products, including iron and steel, salt, sugar, matches, mechanical lighters, cigarettes, kerosene, gasoline, and silver. Collections on account of land revenue and forests appear to have shrunk greatly, coincident with a great slackening of activity in agriculture and forestry.

In view of the publicity given to the Burma Defense Army, it seems highly improbable that twelve million inflated rupees sufficed for the training and upkeep of that army, as indicated by the budget figures for 1943-44. However, the Japanese appear to have generously assumed part of the cost by the simple process of issuing more notes. The Indian Independence Army of S. C. Bose is reported to have been financed by the rump Bose government, which levied a 20 to 50 percent "capital levy" on Indian businessmen in Burma.

Japanese commercial firms paid no taxes to the Ba Maw government, and of course the Japanese army was tax-exempt in all respects. The Japanese seem to have encouraged the reimposition of the thathameda tax, for in Henzada in 1944 the house tax was Rs. 3 and in Meiktila it was Rs. 5. Cattle were taxed one rupee per head per month. Fishing nets were taxed Rs. 2/8/0 annually if they were used without a boat, or Rs. 10 if used from a boat.

In general, the Japanese period presents a picture of hopeless confusion in the fiscal field, occasioned by an unsound economic system generally, and particularly by the issuance of great quantities of irredeemable currency. That period lasted about three years, and leaves behind it an economy the rebuilding of which will place a heavy strain on Burmese finance for many years.

REHABILITATION

The British Military Administration and the civilian government inherited a heart-breaking problem. Production of the commodities Burma formerly exported has fallen so low as to leave a very slight margin for export; and transportation, milling, and manufacture require great expenditures for rehabilitation before normal exports can possibly be restored. Such rehabilitation calls for expenditures many times greater than normal prewar expenditures. The 1946-47 income is roughly estimated at Rs. 210,000,000, against expenditures of approximately Rs. 1,000,000,000.

Agitation by Communist groups, assisted by some Socialist groups, against payment of land revenue hindered to some extent the planting of crops in 1946 and 1947 and may raise vexing problems in future years—problems which may cut down a leading source of government income.

The readiness of the government to explore all possible sources of revenue is indicated by the following press communiqué:^a

His Excellency the Governor has assented to the Burma Finance Act of 1946, on September 26, 1946, which provides for:

- i. The continuance in 1946-47 of the following taxes and duties:
 - a) The existing provisions regarding income tax and super-tax.
 - b) The existing provisions regarding Salt Duty.
 - c) The existing provisions regarding additional salt import duty.
 - d) The present inland postal rates; and
- ii. the increase in the following taxes and duties:
 - e) Duty on motor spirit to be raised from thirteen to fifteen annas per Imperial gallon;
 - f) Increase of eleven annas and one rupee respectively in the excise duty leviable on *blaud-ari* and other sugar (except palmyra);
 - g) Increase by 100 percent in the rates of excise duty on liquor manufactured in Burma;
 - h) Increase by 100 percent in the rates of excise duty on matches manufactured in Burma;

^a *New Times of Burma*, September 29, 1946.

- i) Increase in the existing rates of Betting Tax with effect from October 1, 1946 to 10 percent on all bets at race meetings (including bets with bookmakers).

Increases under (e), (f), (g) and (h) above shall have immediate effect.

Whether because of confidence in the Government's long-run financial position, or because of lack of suitable alternative means of investment, Rs. 20,000,000 of three-month Government of Burma Treasury Bills were offered on September 17, 1946, and were oversubscribed at a rate which yielded three-fourths percent per annum.⁴

Rangoon Corporation was not in much better immediate financial condition than the Government of Burma. Replying to questions from a member of the Interim Municipal Corporation, U So Nyun, the Commissioner, revealed that estimated income for 1946-47 was only Rs. 5,221,000, against Rs. 8,276,551 for 1940-41. Expenditures were estimated as Rs. 32,960,945 greater than receipts. In answer to questions as to the adequacy of Corporation resources, U So Nyun replied:

The present resources of the Corporation are inadequate for undertaking any major reconstruction or rehabilitation work. It is understood that Rs. 16,200,000 will be advanced by Government for this purpose for 1945-46 and 1946-47, but this amount falls far short of the estimated cost. . . . It is the responsibility of Government to finance the reconstruction of the City as the damage was caused by the war.

RECENT BUDGETS

The "revised estimates" of revenue and expenditure for approximately eight months of the financial year ending September 30, 1946, showed revenues of Rs. 97,700,000 and expenditures of Rs. 202,300,000.⁵

Approximately Rs. 111,500,000 was borrowed from the British Government during this period. The estimated deficit for the full year 1946-47 was Rs. 192,300,000 under the head-

⁴ *Ibid.*, September 20, 1946.

⁵ Press statement by the Honorable Thakin Mya, Finance Member, Government of Burma. *New Times of Burma*, April 9, 1947.

ing "Revenue deficit" and Rs. 306,700,000 under the heading "Deficit on loans and advances by Government."⁶ Capital expenditure and rehabilitation totaled Rs. 573,400,000. By adding these three figures it is possible to argue that Burma's budget for the current year is unbalanced to the extent of one billion rupees.

According to the Finance Member:

The deficits in 1946-47 are to a large extent due to the pre-valuation liabilities and to the inevitably large program of reconstruction and rehabilitation. These are of course non-recurring or will not recur to the same extent in future years. Nevertheless it is obvious that Government must address itself to the task of effecting all possible economies in the administration and of securing the maximum revenues by way of taxation and internal loans . . . to counteract inflationary and other tendencies inimical to the re-establishment of a sound economy. This task is engaging and will continue to engage the earnest attention of Government.

Chief among new tax measures was the income tax on agricultural income, introduced in September 1946, and estimated to yield Rs. 100,000,000 in 1946-47. Actual cultivators are exempt, but large landlords and moneylenders own most of Lower Burma land and protested bitterly.

Customs are yielding very satisfactory revenue, the March 1947 total being Rs. 8,822,943.⁷

A basic financial agreement was reached on April 30, 1947, between the British and Burmese Governments, and *Hansard* of May 22, 1947, gives the text as follows:

1. The Government of Burma recognise the vital importance of fostering general confidence in Burma's willingness and capacity to restore her economic and financial position, and with this object in view they have intimated their decision to take immediate and firm measures to increase revenues, to effect reductions in Government expenditure, and to withdraw surplus purchasing power from circulation, in particular by stimulating saving among the general public.

⁶ Reuter's Rangoon dispatch, printed in the *Hindustan Times*, New Delhi, April 4, 1947.

⁷ *New Times of Burma*, May 7, 1947.

2. His Majesty's Government agree to increase their contribution towards the deficit on Burma's Ordinary Budget for 1946-47 to an amount not exceeding £12 million Any unspent balance on the grant of £2.5 million previously promised in aid of the Frontier Areas Budget for 1946-47 will also be available for this purpose.

3. His Majesty's Government take note of the statement of the Government of Burma that the Government of Burma will not be capable of making any further contribution to defence beyond the 335 lakhs already included in the Budget.

The Government of Burma maintain the view that in principle the estimated cost of maintaining troops in Burma, including the cost of supplies and services required by these troops, on a peace-time basis, to meet the peace-time requirements of Burma, is an appropriate charge on Burma revenues, without prejudice to

- (a) the eventual decision as to the strength and composition of the Burma Army;
- (b) a decision on the figures of cost now being calculated by Burma Command;
- (c) the statement on capacity to pay quoted above;

and they agree accordingly to furnish His Majesty's Government as soon as possible with a reply to the Burma Office letter of 22nd February, 1947, setting out their counter-proposals in detail on this basis

4. His Majesty's Government agree to make advances to Burma towards the net expenditure in 1946-47 on Projects (including public utilities, etc., within a ceiling of £18,375,000

5. The Government of Burma agree to pay over to His Majesty's Government the proceeds from the sale of Civil Affairs Service (Burma) stores which are not lend-lease equipment brought from the United States of America. They also agree that on the liquidation of any of the Projects the proceeds of the sale of their capital assets shall be paid over in reduction of outstanding loans after deducting the cost of liquidation. It is further agreed that there shall be the fullest exchange of information relating to the Projects between the two Governments, and that the liquidator shall furnish to His Majesty's Government any information which they may require relating to the disposal of the assets.

6. It is agreed between the two Governments that the possibility of converting part of the interest-free loan into a grant, referred to in paragraph 5 of Annex B to the London Agreement,

shall remain open for further consideration in the light of future developments in the general economic and financial situation.

Signed on behalf of His Majesty's Government
in the United Kingdom:

J. L. C. CROMBIE

Signed on behalf of the Government of Burma.

THAKIN MYA

RANGOON
30TH APRIL, 1947.

FUTURE PROSPECTS

Although the immediate future is dark indeed, there is good reason to believe that Burma's economy is essentially sound, that the prewar level of exports may be attained in most commodities in a few years, and that there will be a fairly dependable world-wide demand for Burmese products.

Thus Burma's chances of securing a much needed loan from the International Bank, or other outside lenders, would seem to depend largely upon the estimate of the caliber of the nationalist government of the country, and its ability and willingness to balance the budget and service external debt. If "no-tax" campaigns become widespread and seem to have considerable popular support, Burma's credit will probably sink accordingly. There seems to be a reasonable prospect, however, that the Government of Burma will adhere to the line of action described in the first paragraph of the Burma United Kingdom Financial Agreement, quoted above, in which case Burmese credit should soon be well established in world money markets.

XXVI

ECONOMIC CONSEQUENCES OF THE JAPANESE OCCUPATION

SUMMARY

PRE-BRITISH BURMA of the early nineteenth century appears, from fragmentary evidence, to have achieved a tolerable standard of living with practically no foreign trade, and very little domestic trade except that between neighboring villages connected by "five-day bazaars." The spinning wheel, the loom, the blacksmith's anvil, and other implements of handicraft industry were found in practically all villages, and it is to be presumed that Burmans then as now were naturally clever with their hands.

The British occupation of Burma coincided with the closing stages of the Industrial Revolution, and brought Burma rather promptly into a rapidly developing world economic order. It was inevitable that Britain, the most highly developed industrial nation of the day, would supply a large portion of Burma's newly required imports, and would provide a market (or find markets elsewhere) for Burma's newly developed exports. In other words, Burma entered upon a century of what some writers have called "colonial economy." This economy is marked by the export of a few raw and semifinished products, the import of a variety of manufactured goods and of necessary machinery and transport facilities, and control of the key points of economic life by citizens of other and more highly industrialized nations.

Rangoon was developed as Burma's outstanding port, through which over four-fifths of the foreign trade passed.

Trade relations were set up with India across the Bay of Bengal and to a smaller extent with the United Kingdom and Europe generally. It should be noted that Burma faces west, that the nearest ports are those of India, and that Burma's land frontiers were not, until 1939, crossed by any important or well-traveled road or railway. In any case, to the east lay Siam and French Indo-China, with almost exactly the same exports as Burma, and quite able to supply the Far Eastern market with sufficient rice and timber. Burma's leading products aside from petroleum.

The British connection meant the fairly rapid development of an excellent inland water transport system, as well as railways, and eventually a rather well-knit system of roads—all three types of transport making Rangoon the hub of their activities.

Whereas much of Lower Burma was waste prior to the British era, millions of acres were taken up and thousands of acres of teak forest brought into production, to make Burma the world's leading exporter of both rice and teak.

Law and order were maintained, a stable currency (from India) was introduced, health standards were maintained, and in various minor ways Burma was equipped to play a role as a leading producer of primary agricultural and mineral products. All in all, a rather high standard of living was maintained—almost certainly much higher than that in pre-British Burma. Moreover, looking at the matter from the strictly economic standpoint, it is doubtful if modern "economic planners," with a view to promotion of maximum economic production for the country as a whole could have done much better than to promote maximum output of rice, teak, and minerals.¹

The Japanese invasion upset the fairly satisfactory economic balance of Burmese economy in practically every respect noted above. Although the Japanese had promised cheap textiles, and some Burmese housewives welcomed Japanese occu-

¹ Economic planning is often, in practice, couched with political objectives. The judgment just expressed is based exclusively on economic considerations, and has no reference whatsoever to the desirability or otherwise of various political systems existing in or proposed for Burma.

pation for this reason, they were faced with the necessity of fighting a great war; and with an extremely long supply line to Burma, were able to send almost nothing except the most urgently needed supplies for the Japanese army. They managed to export a little lead, zinc, tin, and tungsten. However, they lacked transport facilities for maintaining a total export comparable to that normal under British rule, and even had transport facilities been available they would have been unable to make use of Burma's normal rice and teak export—at least during the early stages of the war.

Allied demolition and bombing of refineries, pipe lines, river launches, railways, bridges, and locomotives resulted in a virtual cessation of internal transport, except for the Japanese military, and even military transport was very much slower than normal peacetime transport. Hence, both in internal transport and external trade, Burma was thrown back a century, without warning or previous preparation. Law and order were maintained after a fashion, and a new currency was introduced with the decimal system, but inflation soon overtook the Japanese-sponsored rupee, further to add to the economic chaos and misery.

(Given, say, ten years of preparation, together with a few modern factories, it is conceivable that a moderate standard of living could have been achieved in spite of the virtual cessation of foreign trade. But although looms were to be found in many Burmese homes at the time of the Japanese invasion, a large proportion were seldom used and it was chiefly a few old women who continued to spin and weave at home. The other handicrafts were largely forgotten because of the competition for several generations of cheap machine-made imports. Moreover, the present generation has acquired a taste for bicycles, flashlights, and other commodities which did not enter into the pre-British standard of living. Present population is considerably greater than Burma ever had under the Burmese kings, so the attainment of a satisfactory standard of living under economic self-sufficiency would be correspondingly more difficult.

All in all, Burmans were left with sufficient food of a sim-

ple kind because almost all areas are normally nearly self-sufficient in rice or millet. Housing was not a particularly difficult problem in a land where the bamboo is plentiful and most men know how to make bamboo houses in short order. The clothing problem, however, proved insoluble in spite of strenuous Burmese and Japanese efforts, and great distress resulted. Other commodities, both comforts and necessities, were practically unobtainable, and with a great diminution in the fish catch, the diet deteriorated. The deterioration was only partially made good by the slaughter of great numbers of work cattle—an economic sin which will require years of expiation, before the cattle supply and agriculture can return to normal.

The foregoing remarks relate to the lowland areas, inhabited predominantly by Burmans and Karens. The horseshoe of hills which surround the Irrawaddy Valley is inhabited by Shans, Kachins, and Chins who have never been very closely drawn into modern economic life. Living a relatively self-sufficient life, with standards of living considerably below that of the Burmans, they were not greatly affected by the economic dislocations of the war, except, of course, as armies passed by and requisitioned food supplies, cattle, or laborers. In other words, the economy which never was far above the subsistence level was much less affected by the Japanese invasion than that which, by integration with world economy, had risen considerably above that level. It is highly possible, however, that the fillip given to Burmese handicraft industries will continue to have its effect for a number of years after the war, as cautious elders decide to have their villages continue to produce cloth, etc., "just in case" another unintelligible foreign conflict brings deprivation to the local residents.

AGRICULTURAL RELATIONS

The flight of most Chettyars in 1942 has caused a few observers to leap to the conclusion that the Japanese invasion has largely "solved" Burma's problem of agricultural debt and absentee landlordism. Unfortunately, the problem cannot be solved so easily, for the Chettyars, who own a fourth of Lower

Burma riceland, have deeds, mortgages, and other documents in India, with which to press their claims, and from the strictly legal standpoint, the accumulation of unpaid rent or interest, as the case may be, during the period since 1941, further complicates and intensifies the problem of meeting their claims.

In any case, the few Chettyar agents remaining behind did not attempt any large-scale collections of rent or interest, and thus Burmans took possession of and held millions of acres of excellent land, without payment to the legal owners. In 1943 there was a Tenancy Ordinance, from the Ba Maw government, providing for a 50 percent reduction in the 1942-43 rents. With riceland much less in demand than normal, it is doubtful if landlords received even half the usual rent.

The net result of the Japanese occupation, then, from the standpoint of rural economic relationships, seems to have been to aggravate an already-difficult problem. Government of Burma laws, already on the statute books, looked toward the fixing of fair rents and the solution of the problem of absentee landlordism, and the Chettyars at least seemed willing to co-operate. The need for immediate and wide-scale application of carefully worked-out legislation of a similar kind appears to be greater than ever.

FOOD AND AGRICULTURE

Aside from the virtual cessation of rice export and diminution of rice production already mentioned, perhaps the chief food problem introduced by the Japanese was that of distribution within Burma of existing stocks. The central part of the Dry Zone was normally deficient in rice, receiving part of its consumption needs either from Lower Burma or from the Upper Burma Wet Zone and irrigated tracts of Shwebo and Lower Chindwin districts. Lower Burma, in turn, received most of its daily needs of cooking oil from the vegetable-oil presses of the Dry Zone. The breakdown of internal transport, and the flight of many of the Indians and Chinese who were skilled in effecting exchanges of products within Burma, left the country without a reasonable price structure for agricultural

products. Sesamum oil which was priced at Rs. 8 for ten viss (about 36 lbs.) before the war, sold at Rs. 40 in Magwe early in 1944, Rs. 100 in Mandalay, and Rs. 200 in Rangoon and Moulmein. Rice, on the other hand, which sold at about Rs. 3½ per 75-pound basket before the war, was worth only one rupee in Bassein toward the end of 1943, and Rs. 30 or over in Mandalay in February 1944.²

According to a dispatch from the London *Times* correspondent in Burma,³ acreage in 1943-44 was only 7,200,000 against a prewar normal of 12,400,000. The Japanese succeeded in exporting only 300,000 tons annually—or a tenth of normal exports. The cattle situation, according to the correspondent, was much less serious than was at first believed, since there were areas in Central Burma where fighting had not destroyed the cattle supply, and lack of transport had made impossible the normal export to Lower Burma. Hence, cattle supply in such areas was actually greater than normal. He quotes the agricultural department of the Ba Maw government to the effect that the 1943-44 crop was but 3,024,000 tons of paddy, against a normal six or seven million tons. The 1944-45 crop was believed to have been about 4,500,000 tons of paddy, providing an exportable surplus of around 1,144,000 tons in Lower Burma (against a deficit of nearly half a million tons in Upper Burma).

The result of the Japanese period was that, on British re-occupation in 1945, Upper Burma was found with a serious over-all shortage of rice, while Lower Burma had something like one-third of its normal three and-one half million ton surplus. The shortage of cattle and of equipment, and the general uncertainties of the period, caused the 1945-46 crop to afford only one-sixth of the normal export surplus, and it is estimated that perhaps four years will be required before Burma reaches the three-million-ton mark with its rice exports. Even four years may not suffice unless the cattle problem and the

² The prices just quoted are only approximate, and are based on available, fragmentary data. They are sufficiently consistent, however, to give a general picture which is almost certainly accurate.

³ *New Delhi Statesman*, July 6, 1945.

problem of rural economic relations (including land tenure) can be satisfactorily solved.

FORESTRY AND SAWMILLING

In a country not very subject to forest fires, it is extremely difficult to damage the forests seriously, and even the war of 1942-45 left most of Burma's forests little if any affected. In some areas of military operations and preparations the Japanese felled young unseasoned teak trees, but there is no evidence that a significant proportion of the total teak forests was affected in this way. The Nippon-Burma Timber Union, a commercial combine in which Mitsui, Mitsubishi, and other large Japanese firms participated, carried on a fairly scientific exploitation of forest resources with the aid of some of the senior Burmese forest officers, but total extraction was clearly far below normal, in spite of unusual activity in certain regions for military purposes.

Perhaps the greatest wartime damage to the forest industry relates to elephants. A very large proportion of the 6,000 timber-working elephants died during the occupation, and their replacement by other elephants, or by modern machinery, presents great difficulties.

Some leading sawmills were recovered almost intact, only needing a few items of equipment to resume operations.

MINERALS, REFINING, AND METALLURGY

In general, the Japanese period meant a slackening off or complete cessation of operations throughout Burma's entire mineral industry. Allied bombing frustrated repeated attempts to operate the oil fields; demolition, bombing, and the difficulty of importing adequate machinery kept operations at the Bawdwin Mine and Namtu at a low level, while the tin and tungsten industry was carried on somewhat more successfully, but nevertheless at much less than normal output.

MANUFACTURING AND POWER

Allied demolition and bombing, lack of staff and replacement parts, and lack of transport all combined to reduce indus-

trial activity to a very low level indeed. Since industry was largely related to an export market, and transport of the finished product to Japan or elsewhere was out of the question, the need for operating the factories was not as great as in normal times. Various makeshifts were used in Rangoon and a few other places to replace the rather adequate prewar power plants which were demolished or bombed out. However, electric power consumption was very much below normal levels.

LABOR

Most of the unskilled industrial labor of prewar Burma was Indian but, as shown in chapter xxi, much the greater part of the total labor supply was indigenous. The flight of about half the Indian population curtailed the industrial labor supply at a time when it would have been impossible to operate all the factories for other reasons. Moreover, the lack of facilities for rice export very greatly reduced the amount of labor which could usefully and economically be employed in Lower Burma agriculture. Hence there was a considerable real surplus of labor scattered about Lower Burma in particular. The Japanese authorities were not slow to take advantage of this surplus, and local officials were forced to draft tens of thousands of unwilling laborers into the "Sweat Army" and other auxiliaries of the Imperial Japanese Army. Labor was used chiefly in road building and similar works of military usefulness.

The flight of great numbers of Indian laborers raises a delicate problem, that of their return to Burma now that the war is over. About 10,000 per mensem have returned thus far this year, and while both governments appear to agree in principle that the evacuees should return, both have imposed some control over their return, although that control is not as great as control over immigration of Indians desiring to enter Burma as laborers for the first time. The reconstruction of Burma's damaged transport and industrial systems and the rebuilding of the main towns will require great amounts of local labor or of imported Indian labor. It seems possible to solve the problem in either way.

DOMESTIC AND FOREIGN TRADE

Since the Burmans had long carried on a fair proportion of the trade in local produce for local consumption, wartime dislocations did not affect the country as severely as it might have done if foreigners had monopolized both domestic and foreign commerce. However, foreigners had carried on much of the wholesale trade, even in respect to Burmese produce consumed locally, and in so far as the Japanese army, and Japanese civilians under army control, did not monopolize wholesale trade, many Burmans gained new experience which may be of use to them in the future.

With regard to commodities of interest to the military, however, Burmans had little to do. Four Japanese companies, for instance, had a monopoly on the cotton trade, while one of them—the Mitsubishi-sponsored Fujigasu Boseki Kaisha—was Burma's only manufacturer of cotton yarn and cloth. Prices to the farmers were severely controlled, a farmer receiving but Rs. 5 for a viss (3.6 pounds) of cotton, at a time when cotton longyis cost hundreds of rupees each.

At the end of the summer of 1944 the Japanese army authorities issued regulations to tie in Japanese firms more closely with the war effort. It is to be noted that the Ba Maw government did not have any control over such firms, in spite of the latter's control of a fair proportion of the country's remaining economic life.

Foreign trade was practically at a standstill, except for military imports and the exports of a few strategic minerals, etc., on a reduced scale. There is a tremendous backlog of demand for postwar imports, and it will be several years before Burma is in a position to export goods with a total value double that of its imports—the condition normally existing before the war.

TRANSPORT

Ocean, riverine, rail, road, and air transport are all prime military objectives, and Allied bombers and fighter-bombers were increasingly successful in reducing the operation of each

of these types of transport to a small fraction of prewar normal.

By 1943 ocean shipping had been reduced to little more than the activities of numerous small wooden craft of 100 to 300 tons capacity, which hugged the coast line, and were most active between Moulmein and Gao Huagang (Gao Fachi) in Siam near Victoria Point on the Kra Isthmus. The only new railway developments were the Moulmein-Bangkok line and the Chumbhorn-Gao Huagang line. The latter was entirely within Siam, but its significance lay in providing an alternative route for Siamese-Burmese trade. By 1944 railway traffic was brought practically to a standstill as a result of the rising tempo of Allied bombing of bridges, locomotives, and rolling stock. Highway traffic was likewise kept rather low both by Allied demolition and bombing of petroleum manufacturing facilities, and consequent shortage of fuel. Distillation of rubber and other devices were not highly successful expedients.

Military authorities restored the Rangoon docks to fairly normal operation within a few months of their occupation of the city in early May 1945. However, some wharves remain a mass of wreckage two years after the end of the war. The main lines of the railway were restored to subnormal operation within the first year of peace. The import of thousands of jeeps and other military vehicles restored total highway traffic to something approximating its prewar position. Gasoline must still be imported, as the Syrian refinery will not recommence operations before 1949, and it is likely that scarcity and the high price of petroleum products have operated to keep motor traffic from increasing to a level much greater than that reached before the war.

COMMUNICATIONS

Wireless communications are such an essential aspect of military operations that they seem to have been maintained with practically no interruption throughout the war period. The Rangoon telephone system was rather rapidly restored to limited public use. During the Japanese occupation it was available for Japanese use only.

MONEY AND BANKING

The one improvement introduced by the Japanese was the introduction of the decimal system. This was much more than counterbalanced by flooding the country with irredeemable paper currency and supplying no goods whatsoever to absorb this spurious "purchasing power." The Civil Affairs Service (Burma) announced on its return that Japanese money was valueless, and advised the use of special Indian money exclusively. This decree caused numerous protests from holders of vast quantities of Japanese notes, but it does not seem to have prevented the rather prompt improvement in economic life. In fact, since, at the time of the publication of the decree (June 1945), Tenasserim was still in Japanese hands and the Japanese were presumably still issuing their paper money, a British decision to assign some fixed value to Japanese money would probably have served to bolster the position of the Japanese in that part of Burma remaining to them.

Banking was taken over by the Yokohama Specie Bank and other Japanese-sponsored institutions, but the general economic disorganization, and in particular the chaotic currency condition, prevented banking from attaining any real significance throughout the Japanese period.

PUBLIC FINANCE

Burma's prewar financial situation was sound indeed, with a debt of only Rs. 34 per capita, of which Rs. 20 represented capital expenditure on the Burma Railways. Although the war resulted in great damage to Burma's few factories and not-very-large transportation system, it did not increase the country's public debt, and in that respect Burma is more fortunate than Britain or the United States with their enormous load of debts. However, the restoration of the railways and other facilities to their prewar normal, and the compensation of holders of "War Risk" insurance make necessary unusually heavy state expenditures during the reconstruction period, and consequently a considerable increase in the public debt. Even that increase will still leave Burma one of the countries with the smallest per capita debt.

XXVII

THE FUTURE OF BURMESE ECONOMY

THE RECONSTRUCTION PERIOD

BURMA was as hard hit by the war as any Asiatic country, with the possible exception of Japan itself. As indicated in the foregoing chapters, the war left Burma's economy almost completely wrecked and in need of very great financial and technical assistance from abroad before it could be restored to normal. However, compared to the task facing such industrialized countries as Belgium or Germany, Burma's postwar reconstruction problem is relatively simple. A very large part of the wealth of European countries was destroyed by bombs and fire, whereas Burma's wealth consists predominantly of almost indestructible agricultural land, forests, and mineral deposits. Factories (and the larger utilities) gave employment to only 90,000 out of a working population of 6,000,000 to 8,000,000, while transport employed but a few thousand more.

The main lines of the railways were restored to operation within the first year after the Japanese were driven out, and considerable traffic was restored on the roads and waterways. As early as July 1945 the port of Rangoon was approaching its immediate goal of 6,000 tons of imports daily, and during the succeeding months it handled imports at about the prewar rate. Some utilities were found in fair order by the returning British forces, but plans are afoot for the complete reconstruction of Burma's not very adequate prewar electric supply system.

Agricultural reconstruction is of course the principal problem for those concerned with Burma's future. It involves the immediate problem of providing the farmer with imports of

clothing and a few simple tools, and the longer-range problem of providing him with more cattle and with a system of land tenure and agricultural credit which is much more satisfactory than that prevailing before the war. Natural increase, with Upper Burmans and Shans encouraged to breed cattle as rapidly as possible, seems the only likely solution to the cattle shortage. Both British and Burmese leaders are acutely aware of the necessity of overhauling the system of agricultural relations, and there is good reason to expect that their efforts will meet with some measure of success. The purchase of Chettyar holdings, however, will necessitate the assumption by the Government of an enormous debt, repayable only by taxes and payments of principal and interest by cultivators themselves. Given a firm and intelligent administration at Rangoon, such problems seem capable of being solved.

Flotilla and other vessels destroyed in 1942 as a war measure will presumably provide another important but bearable increase to the public debt, as will reimbursement of owners of utilities and oil companies, etc., for war losses.¹ All in all, the physical task of restoring Burma's industry, utilities, and transport does not appear to present great difficulties, and the financial burden would seem to be quite within reason.

The greatest immediate problem is that of restoration of agricultural production, particularly the export of rice. This was recognized by the Civil Affairs Service (Burma) which distributed a leaflet in June 1945, addressed to Burmese peasants, and reading (in translation) as follows:

The whole world is short of rice. There will be a certain sale for every grain of rice that can be shipped from Burma ports. Some parts of Burma are short of paddy. They will have the first call upon the surplus in paddy-growing districts. . . . The Military Administration will do all it can to assist in putting rice mills into working order quickly. The Military Administration will buy from every working mill as much rice as the mill can produce from your existing stocks of paddy. . . .

The leaflet then discusses the currency situation, and the fact that payment will be made in "good British currency" and

¹ Except as such losses are made good by the British.

hence prices seem very low. However, Japanese currency would buy practically nothing because of lack of imports, whereas:

Large orders have been placed for all the imported goods of which Burma has been starved so long. At present our ships are busy carrying materials for the war against Japan and therefore the flow of goods into Burma will, at first, be small. But the Japanese are being beaten and soon the flow of goods into Burma will increase. Already, 150,000 longyis have arrived in Rangoon. The goods will be fairly distributed at prices which you can afford to pay when you have sold your paddy. . . . GROW AS MUCH PADDY AS YOU CAN THIS YEAR. It will all be bought at prices which will enable you to buy the goods you need.

The final paragraph of the leaflet is most interesting. A very delicate problem facing agricultural rehabilitation in Burma relates to land tenure, particularly the tenure of land belonging to Chettyars and other absentee landlords. The Military Administration obviously wished to postpone facing this problem, for the last paragraph reads:

No absentee owner or tenant or any other person will be allowed to evict you from land you are now working so long as your occupation of the land gives rise to no dispute involving a breach of the peace. If you cultivate the land you will have the right to harvest and sell the crop.

The immediate problem of inducing Burmese peasants to plant, cultivate, and harvest rice in order that Burma may resume its role of helping to feed India and Ceylon may quite possibly be solved without touching the long range problem of absentee landlordism. But with well-organized and well-financed pressure being brought to bear on both the Government of Burma and the Government of India, some permanent settlement of the land-tenure problem must be worked out within the next two or three years. If the old ideal of peasant proprietorship is to continue to be the goal, the solution would seem to lie along lines roughly indicated by the 1938 Land and Agriculture Committee, Burma, with its proposals for Land Alienation, Tenancy, and Land Purchase Acts. Such bills became law shortly before the Japanese occupation, and skillful and patient administration may yet prove them to need but

MAP OF BURMA

The map on the opposite page shows the principal political divisions and geographical areas of Burma. In the following list the chief economic products of Burma are given opposite their respective areas. For topographical details of the nine main geographical areas of the country, see the map facing page 3.

Iukawng Valley, Bhamo, Katha, Schwebo, Chin Hills, Kyaukpyu, Sandoway, Insein, Thaton, Mergui	} Rice	Kyaukse	{ Rice, beans, sesamum
		Toungoo	{ Rice, teakwood, sugarcane
Upper Chindwin, Akyab and Arakan Hill Tracts, Thara- waddy, Henzada, Amherst, Lower Salween District	} Rice, teakwood	Yamethin	{ Rice, teakwood, beans, sesamum, sugarcane
		Thayetmo	{ Rice, teakwood, cotton, petroleum
Ma-ubin, Myaung- mya, Pyapon, Han- thawaddy	} Rice, fish	Sagaing, My- ingyan, Meik- tila	{ Rice, cotton, beans, groundnuts, sesa- mum
Bassein	{ Rice, teakwood, fish	Kakokku	{ Rice, beans, sesa- mum, groundnuts
Northern Shan States	{ Rice, lead, zinc, silver, fruits, rubies	Prome	{ Rice, teakwood, beans, handwoven textiles
Southern Shan States	{ Rice, teakwood, potatoes, tung oil, fruits, vege- tables	Pegu	{ Rice, teakwood, sugarcane
Lower Chindwin	{ Rice, teakwood, cotton, beans, sesamum	Tavoy	{ Rice, tungsten, tin
Myitkyina	{ Rice, sugar, jade	Magwe, Minbu	{ Beans, petroleum, groundnuts, millet
Mandalay	{ Rice, beans, sesamum, fruits, vegetables, handwoven textiles	Karenni	{ Tin, teakwood, tungsten

minor alterations. It seems quite certain that land purchase, to turn over to Burmans the land now owned by Chettyars, will be fruitless unless a land alienation act prevents Burman cultivators from mortgaging their land and starting the cycle once more.

Another problem of almost equal urgency relates to cattle. The cattle population of Burma was very seriously depleted by the Japanese occupation, and practically all rice cultivation in Burma (unlike that in parts of China and India) is carried on with the help of cattle or water buffaloes. It seems necessary to wait a few years for the cattle population to return to normal. In the meantime agricultural production may suffer, unless some novel method, such as introduction of large numbers of tractors into the Dry Zone, is initiated. In such a case most Dry Zone cattle could be shifted to Lower Burma where tractors have been a failure in rice production. There is no likelihood, however, that the necessary large number of tractors will be made available to Burma within the next two or three years (i.e., during the period of greatest need).²

BURMA AS PART OF SOUTHEAST ASIA ECONOMY

Burma is geographically part of the Southeast Asia peninsula. Its main exports—rice and timber—are also leading exports of Siam and French Indo-China. All three, and Malaya and Indonesia as well, export tin, rubber, and tungsten. And all import a great variety of textiles and other consumption goods from more highly industrialized countries. It is not surprising, therefore, that trade within Southeast Asia is much less important than the trade of each separate country with Europe, India, and the Far East. A leading exception to the rule that Southeast Asia countries are competitors in international trade is the large import of rice by Malaya from its three northern neighbors.

International tin and rubber cartels have attempted to take advantage of the near-monopoly position held by a few coun-

² For a more detailed discussion of Burma's problems of reconstruction see J. R. Andrus, *Burial Problems of Relief, Rehabilitation and Reconstruction in Southeast Asia* (Oxford University Press, Bombay, 1946).

tries. The headquarters of such cartels are not in Southeast Asia, however, even though most of world production is located there. This is a reflection of the subordinate political as well as economic position of Southeast Asia in the modern world. It is interesting to speculate as to whether or not similar monopolistic agreements may be reached with regard to rice and teak, in view of the fact that Burma, Siam, and French Indo-China export about three-fourths of the rice entering world trade and nearly all the teak. Barring unforeseen developments, no such cartel seems likely, for rice is produced in great quantities by many other countries, and competes with wheat and other cereals on the world market. Teak, likewise, although an excellent timber, must face the competition of numerous other hardwoods, and also of steel, steel alloys, and other materials.

To sum up: there seems to be no strong economic incentive for closer economic ties within Southeast Asia. That part of the world must continue to look abroad for markets and suppliers.

RELATIONS WITH INDIA

India took more than half of Burma's exports, and supplied more than half of Burma's imports, prior to the recent war, and there is every reason to expect a return to approximately that position in the postwar period. The cutting off of Burma's rice export to India and the complementary inflow of Indian textiles and other commodities reacted most unfavorably upon both economies during the war period. The loss of Burma rice imports was undoubtedly one of the causes of the disastrous Bengal Famine of 1943. On the other hand, there are reports of genuine distress, even contributing to suicide, on the part of Burmans whose clothing wore out and could not be replaced.

The very great preference given impetus from India by the Burmese tariff of 1946 may possibly be replaced by provisions placing Indian goods on the same basis as other foreign goods except, perhaps, as genuine and substantial *quid pro quo* may be offered by India. It will be recalled that the present Burmese tariff was issued just before the nationalist group headed by

General Aung San became an effective force within the Government. On the other hand, the present government has shown no evidence of a desire to discriminate against trade with India and it seems almost certain that India will continue to be Burma's chief trading partner.

Since free trade between Burma and India, with a protective tariff against manufactured goods from abroad, amounts to Burmese subsidization of Indian industrialization, it seems unlikely that an independent Burma will return to the legislation existing before the Indo-Burma Trade Agreement of 1941, or even continue indefinitely the present discrimination in favor of Indian manufacturers at the expense of Burmese consumers, Burmese customs revenues, and foreign competitors. On the other hand, India seems likely to have a fairly rapid industrial development, and that development is almost certain to benefit Burma by providing a convenient and cheap source of many types of goods in demand in the Burma market. In fact, it is only by industrial development on a large scale in India and China that Burma and other countries of Southeast Asia are likely to overcome the handicap in their trading relations caused by the inability of Japan to export great quantities of cheap goods for several years to come. Cheap Japanese goods undoubtedly proved an economic boon, for the time being, to the peoples of Southeast Asia who were unable to purchase the more expensive, if better quality, goods from Europe or America.

Aside from trade relations and the problem of Chettyar landholdings, Burma's outstanding economic contact with India relates to immigration. Indians of all classes, from coolies to prosperous merchants and manufacturers, did well in prewar Burma, and contributed to the flow of vast sums yearly to India in remittances to relatives and families. Representatives of Indian shipping companies are very naturally using their influence at the present time to secure the repeal of recent Burmese legislation requiring passports and visas, presumably as a preliminary to restriction of immigration. On the other hand, there is some evidence of the unwilling-

ness of many Burmans even to receive back the 400,000 Indians who fled before the advancing Japanese in 1942—many of whom now wish to return to the land of their adoption. Many observers believe that large-scale Indian immigration is essential to the rehabilitation of Burma, but reasons are given in chapter xxi for doubting if Indian immigration is actually essential to Burma's economic life, although it has admittedly played an important part in the past.

Indians controlled more than half of Burma's rice exports, and were important in the export of several other commodities, as well as being the leading importers of most items. They owned many sawmills, rice mills, and miscellaneous but important factories like those manufacturing matches, soap, and knit goods. Over half the Indian population remained in Burma, however, and seem to have retained a fairly important place in the economic life of Rangoon in particular. The war has undoubtedly awakened many Burmans to the necessity of taking a more active part in their country's industry and trade, with the result that Indians will find more competition in all walks of life than before the war.

Although Burma and India have a long land frontier, and although the Ledo or Stilwell Road and the Imphal Road connected them during the war, it seems likely that for a long time to come the only important traffic between the two countries will be by sea.

RELATIONS WITH CHINA

As Burma and China are "back to back" with difficult mountains between their more well-developed sections, trade across the land frontier has never been large, although it is many centuries old. The only partial exception was 1939-41 when the Burma Road carried fairly large quantities of war materials and other goods to beleaguered China. Traffic by sea was ordinarily more important than land trade, but as that journey was a long one, via Singapore, Sino-Burmese trade was seldom large.

It seems likely that a large share of Sino-Burmese trade

will continue to go by sea. However, if China returns to a peaceful and progressive state, developing Szechuan and Yunnan industrially and otherwise, the Burma Road and or the Yunnan-Burma Railway may at some future time assume economic significance. There is no present prospect of this development, however.

As Rangoon was the junction point for the China National Aviation Corporation and the three international lines flying to Europe before the war, there is a possibility that Burma's capital may again become an air crossroads, with American and possibly Swedish lines participating in the traffic. Such a development would increase Burma's economic contacts with China.

There is no apparent threat of great immigration from China to Burma. Immigrants proceeding to Burma by sea would find many tempting opportunities closer at hand, while those approaching Burma by land would pass through undeveloped parts of Yunnan, where they could settle within their own country. Moreover, the recent immigration legislation provides a means of restricting Chinese as well as Indian immigration. In 1941 negotiations to that end were under way, but did not bear fruit before the outbreak of war. The Chinese are similar to the Burmans racially and socially, and create much less of a social problem than do Indian immigrants. Thus, it is extremely unlikely that Burma will have to face a Chinese minority problem.

In conclusion, therefore, it appears likely that Burma and China will have somewhat more extensive economic relations than before the war, but transportation difficulties and the closeness of Indo-China and Siam to China seem likely to prevent the latter country from ever becoming as important a trading partner with Burma as India will certainly continue to be.

INDUSTRIALIZATION OF BURMA

Nationalists in Burma, as in most other economically undeveloped countries, have noted that the strongest and richest nations of the world are almost invariably those with the

greatest industrial development. Hence industrialization is regarded as the key to wealth, power, and national well-being.

The industrialization of Burma, however, presents two distinct and very difficult problems: (1) securing for Burmese citizens control of most of the country's existing industries, and (2) creating new industries and enlarging those which now exist. The first problem is not, generally stated, the subject of serious dispute. Most Europeans, Indians, or Chinese would agree as to the desirability of greater Burmese participation in industry. When the case for Burmanization is based, however, on accusations against the fundamental nature of previous development, there is considerable room for argument.

As indicated in the quotation on pages 192-93, one excellent reason for the development by European firms of production of raw materials is that Burma's conditions of soil, climate and labor supply make such development profitable.³ European nations like Denmark, and American states like Iowa, find that rich soil and natural resources enable them to reach a higher standard of living and of national and local well-being by concentrating on the development of those resources. On the other hand, population growth, the development of new skills by Burmans, and the proved uncertainty of foreign trade in the event of war furnish convincing arguments in favor of a reasonable program of industrialization.

For the most part, Burma's resources and previous economic development suggest that that country will be most prosperous if it continues as a producer of rice, timber, and minerals. Like Denmark, it may find great well-being and prosperity for its people in a development which does not lead to military or industrial greatness. Bituminous coal has hitherto been the basis of industrialization in most highly developed countries, and it seems to be lacking in Burma. Perhaps the Hatgyi Rapids (on the Salween above Moulmein) and other water-power sites will provide Burma with cheap electric power in due course, but for the immediate future there does not seem

³ See "Industry and Agrarian Reform," *Far Eastern Survey*, July 2, 1947, for a sane discussion of the pros and cons of rapid industrial development in the Orient.

to be much justification for planning for more than a doubling or trebling of Burma's 1,000 prewar factories with their 90,000 workers.

Some industries, particularly cotton textiles, might be developed with existing resources, however. Burma's cotton production of 18,000 tons would provide about half the country's clothing, and with better prices it would be easy to persuade farmers to produce twice that much. Bicycle tires and miscellaneous minor rubber goods have been produced in Burma on a small scale and there seems no reason why a much larger industry might not prosper. In the Shan States there is a production (which might be greatly expanded) of several kinds of Temperate Zone fruits, including strawberries, as well as the basis for a considerable dairy industry. Hence there seems no good reason why Burma should import quantities of Australian and American canned fruit and milk, for which the consumer pays about twice the retail price in the countries of origin. With Burmese sugar production approaching total domestic consumption, tin plate would be the only import regularly necessary for a Burmese canning industry. Similarly, flashlights and batteries, various chemicals and medicinal products as well as toilet articles could be manufactured mostly from Burmese materials with a maximum adaptation to local tastes.

As Burmans owned almost no prewar factories except a few rice mills and sawmills, it takes considerable faith to believe that they will make any significant strides toward industrialization of their country in this generation. However, it is possible that Burmese ambitions will be found to be much broader in the peacetime period as a result of the war's drastic shortages and focusing of attention on world affairs. The enthusiasm and energy released by Burmese nationalism, together with the attainment of political independence which enables this nationalism to be directed into constructive, nation-building channels will undoubtedly help to inspire Burmans to make their country economically self-governing, as well as politically self-governing.

It is highly possible that in Burma, as in Siam, it would

be a national government which would itself take a lead in purchasing foreign-owned industries for management as state-controlled companies. For some time, at least, foreign capital and technical assistance will be necessary, and only the government would seem to be in a position to secure them on reasonable terms. Thus, such industrialization as takes place in Burma is likely to be either foreign in origin, or inspired by the government, or a combination of foreign and Burma government enterprise—perhaps modeled after the China National Aviation Corporation, in which a majority of the stock is owned by the Chinese government and a minority by the Pan American Airways. The latter company furnishes equipment and technical assistance, leaving policy matters largely in the hands of the government. Such an arrangement appears an excellent means of bringing the results of technical improvements elsewhere to an industrially undeveloped country, without running the risk of permanent control of economic life by foreigners. Burmans are fully as capable as Siamese of great national enthusiasm and it is highly possible that the development of Burmese-controlled industry will be taken up as a patriotic duty and privilege and with hitherto unsuspected energy and initiative.

CHANCES OF INCREASED STANDARD OF LIVING

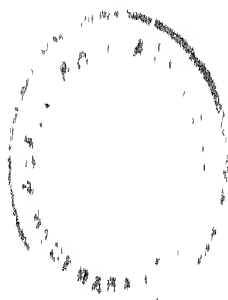
The Burmese standard of living was definitely higher than that of China or India, judging by available mortality statistics as well as by common observation of village life. The chief reason appears to be that Burma is not overpopulated as are its great neighbors. Another and related reason is that Burma's soil, climate, forests, and mineral resources are so great, in proportion to population, as to bring wealth to its people if efficiently utilized.

An increase in the standard of living must depend chiefly upon agriculture, forestry, and mining, particularly the former. The Department of Agriculture has already developed improved seeds, crops, tools, fertilizers, and techniques which, if generally used, would undoubtedly produce a great increase in yield per acre. It remains to be seen if the events of the recent

war have sufficiently jarred Burmese farmers out of their conservatism to permit a more rapid introduction of modern techniques.

The small degree of industrialization mentioned above as a possibility may further increase the Burmese standard of living. Another possibility is the purchase by Burmans, through their government or otherwise, of land and other assets now owned by foreigners. The proceeds of such investments previously remitted abroad would make a sizable addition to Burmese wealth.

Given a reasonable period of peace, law, and order, it seems highly possible that this energetic and intelligent people, possessed of a rich variety of natural resources, will attain a consistently rising standard of living.



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